

**FACT SHEET FOR NPDES PERMIT  
NO. WA-000056-6**

**SNOKIST GROWERS  
TERRACE HEIGHTS CANNERY**

**SUMMARY**

Snokist Growers is a grower-owned cooperative. Snokist operates a fruit cannery in Terrace Heights, east of Yakima, Washington. According to the Snokist application for NPDES permit renewal, 135 to 180 tons of cherries, 500 to 650 tons of pears, 100 to 270 tons of plums and 25 to 375 tons of apples are processed daily, each according to seasonal harvest time.

Other than sanitary wastewater that is treated at the Yakima POTW, industrial wastewater is of essentially two types. Process wastewater is collected from cutting machines, peeling machines, and other operations in a system of open gutters and gravity sewers. The resulting wastewater is then treated in a lined aeration basin of approximate dimensions 300'× 300'×10'. The second type originates from the can cooling and sanitation line. The 0.60 MGD flow is combined with the treatment plant effluent prior to discharge to the Yakima River.

The Permittee has two dechlorinators for dechlorinating two separate process wastewater streams in the plant. One dechlorinates container cooling water, which is chlorinated for can sanitation. This water is dechlorinated prior to the combined discharge. The second unit dechlorinates process wastewater at the lift station prior to entering the wastewater treatment plant. The plant operator reports periodic upset at the plant, which he suspects comes from slug discharges of chlorine originating from plant cleanup activities.

Based on the Permittee's DMRs, the Department has determined there is reasonable potential to exceed the water quality standard for chlorine. Therefore, interim average monthly chlorine limits are established while the Permittee investigates chlorine sources and develops a Best Management Plan, BMP, to address chlorine use reduction and dechlorination in the plant. Following completion of the Schedule of Compliance for the chlorine BMP, final chlorine limitations will be imposed.

This proposed permit will establish performance based limitations for TSS and BOD on the treated wastewater. Limitations are required by law to reflect all known, available, and reasonable methods of treatment (AKART) under RCW 90.52.040, 90.54.020 (3) (b), and 90.48.520. The current permit limitations are based on Federal Categorical Limits that are over 30 years old, make it difficult to verify compliance, and are mass based although the Permittee does not currently have an effluent flow meter. The performance based limits will be concentration based which will apply throughout the year.

The Permittee will be required to develop a flow meter installation plan, drafted by a licensed engineer, and install a flow meter to determine the flow rate of the combined wastewater/can cooling water discharge to the Yakima River.

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## **INTRODUCTION**

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the State is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant:	Snokist Growers Terrace Heights Cannery
Facility Name and Address:	Snokist Growers Terrace Heights Cannery 2506 Terrace Heights Road Yakima, Washington 98901
Type of Facility:	Food Processing, Cannery
SIC Code:	2033
Discharge Location:	Waterbody Name: Yakima River at River Mile 114  Latitude: 46° 36' 15" N Longitude: 120° 28' 20" W

## BACKGROUND INFORMATION

### DESCRIPTION OF THE FACILITY

#### History

Snokist Growers is a grower-owned cooperative operating a fruit cannery in Terrace Heights, just east of Yakima. The cannery processes apples cherries, pears and plums and preserves them in cans. According to the application for NPDES permit renewal, up to 180 tons of cherries, 650 tons of pears, 270 tons of plums and 375 tons of apples are processed daily.

#### Industrial Process

Raw fruit is peeled or otherwise prepared, cut, sorted and packed in cans with syrup, then sealed and sterilized. Fruit is processed and canned as the various fruits ripen in the Yakima Valley. Apple sauce and other apple products are canned as apples are removed from cold and controlled atmosphere storage throughout the year.

#### Treatment Process

Sanitary wastewater is treated at the Yakima POTW. The wastewater from cut and peeled fruit, equipment wash water, floor cleanup requires treatment at the Snokist owned and operated treatment plant. Chlorinated can cooling water is combined with treatment plant effluent and discharge directly to the Yakima River.

Process wastewater discharged for the last three years has averaged about 0.432 million gallons per day (MGD). Due to an influx of untrained workers, the discharge rate may approach 1 MGD

or more for a time. Prior to treatment, this wastewater contains about 2,300 milligrams per liter (mg/l) of 5-day Biochemical Oxygen Demand (BOD5) in the form of fruit solids and sugars.

The process wastewater is collected from cutting machines, peeling machines, can sterilizers and other operations in a system of open gutters and gravity sewers. Collected wastewater is pumped from a lift station to the headworks of the wastewater treatment system where flow is measured by means of a rectangular weir. Sulphur dioxide dechlorination takes place at the lift station. The resulting wastewater is then treated in a lined aeration basin of approximate dimensions 300' × 300' × 10'.

Due to the extremely high sugar to protein ratio, ammonia and phosphate are metered into the wastestream to supply nutrients that promote the bacterial growth needed for effective wastewater treatment. The biological treatment process occurs in the aeration basin, which is known as the activated sludge process. The wastestream then flows to a clarifier which is 8' deep and 90' in circumference for settling of solids.

De-chlorinated container cooling water is combined with the clarified effluent in the same outfall pipe discharging directly to the Yakima River. The actual effluent discharge volume is not measured. The only measurement of process water volume occurs at the headworks prior to any significant evaporative losses.

Container cooling water is generated at a rate of about 0.6 MGD. This chlorinated cooling water is discharged to the outfall pipe at a temperature slightly below 37.80° C. This wastewater chemically oxidizes components of the process waste stream, neutralizes acidity in the process stream and cools considerably when mixed with the wastewater discharge, which flows through an underground outfall pipe 1800 ft in length.

Thickened activated waste sludge from the treatment system is hauled by a licensed hauler under contract with Snokist for land disposal around the area. Screened fruit solids are removed and used as cattle feed.

Previously, when the treatment capacity was not adequate for the total wastewater load caused by unusually large crop harvests, Snokist discharged to a 160-acre sprayfield in accordance with recommendations from the federal development document for effluent guidelines. The sprayfield has not been used since the 1991 and 1992 process season and according to the treatment plant operator the sprayfield is no longer available to Snokist. Therefore, the proposed permit will not authorize any sprayfield discharge.

### **Discharge Outfall**

The outfall currently sidebank discharges at the edge of the river about ¼ mile downstream from the Terrace Heights Bridge. The Yakima River in this reach is in an alluvial bed, and annual floods have eroded the bank in the direction of the outfall. The river channel has migrated some

400 feet since the outfall was constructed. The outfall has been reconstructed several times following destruction caused by river bank erosion during flood episodes. Because of this condition installation of a diffuser is impractical and a mixing zone can not be allowed.

## **PERMIT STATUS**

The previous permit for this facility was issued on June 22, 1993. The previous permit placed effluent limitations on BOD, TSS, pH and Temperature.

An application for permit renewal was received and accepted by the Department on May 4, 1998. The Department administratively extended the permit term until July 1, 2003 because of a lack of resources. The Permittee submitted an application for permit reissuance on October 1, 2001 and the application was accepted by the Department on October 11, 2001. However due to a lack of resources, the Department continued the conditions of the 1993 permit by administratively extending the existing permit until June 30, 2008 or until that time the Department reissues the permit. The permit application was updated by the Permittee on February 4, 2005, at the request of the Department, in preparation for the Snokist Grower's permit reissuance.

## **SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT**

During the history of the previous permit, the Permittee has remained in substantial compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The only recent infractions have been failure to submit DMRs by the 15<sup>th</sup> day of the month deadline.

In 1993 the Permittee appealed the conditions of the existing permit before the Pollution Control Hearings Board, PCHB. As a result of this appeal the Permittee and the Department signed a settlement agreement before the PCHB, which became effective in December 1994. The settlement modified the permit limitations of Special Condition S1 with a definition of seasonal mass loading calculations and concentration limitations for BOD and TSS. The settlement modified some of the aspects of the monitoring requirements contained in Special Condition S3A. It also provided that Special Condition S7, requiring an analysis of the treatment plant capability, could be replaced with a plant modification engineering report to be submitted by December 1995.

A draft of the engineering report was received at the Department in August 1998 and was approved in August of 1999. The plan made recommendations as to procedures and infrastructure improvements, which has greatly improved the treatment plant's ability to produce good quality effluent on a fairly consistent basis. Based on the plant's performance as a result of these improvements, Performance-Based Limitations will be contained in the proposed permit.

## WASTEWATER CHARACTERIZATION

Table 1 below characterizes the wastewater as reported during the current permit term from April 2001 to August 2004 and compares as a percent the selected parameters against the seasonal permit limitations. This is to demonstrate the effectiveness of the treatment process as it relates to the permit limitations. The data contained in Table 1 indicates that the treatment process is operates well below the current permit limitations.

**Table 1: Wastewater Characterization from April 2001 to August 2004  
Compared to Seasonal Permit Limitations**

Par ameter	Units	Cumulative Average Monthly Concentrations			Maximum Daily		
		April 2001 to August 2005	Limit mg/L	Percent of Limit	April 2001 to August 2005	Limit mg/L	Percent of Limit <sup>2</sup>
BOD <sub>5</sub>	mg/L	13.3	80	16.6	38	120	31.7
TSS	mg/L	34	250	13.6	130	500	26
Phosphorus	mg/L	10.9	NA		43.4	NA	
Nitrogen	mg/L	5.3	NA		43.6	NA	
Chlorine	µg/L	92	NA		290	NA	
Parameter	Units	Cherry Season June-July Monthly Average			Cherry Season June-July Maximum Daily		
		2001-2005	Limit lbs/Day	Percent of Limit	2001-2005	Limit lbs/Day	Percent of Limit
BOD <sub>5</sub>	lb./Day	26.3	138	19.1	161	224	71.9
TSS	lb./Day	70.5	286	24.7	322	402	80.1
Phosphorus	mg/L	17.6	NA		24.4	NA	
Parameter	Units	Pear, Plum & Apple Season August-November Monthly Avg.			Pear & Apple Season August- November Maximum Daily		
		2001-2005	Limit lbs/Day	Percent of Limit	2001-2005	Limit lbs/Day	Percent of Limit
BOD <sub>5</sub>	lb./Day	36.8	1431	2.6	199	2370	8.4
TSS	lb./Day	135.3	2751	4.9	1348	4000	33.7
Phosphorus	mg/L	28 28.5	NA		43.4	NA	
Parameter	Units	Apple Season December-May Monthly Avg.			Apple Season December-May Maximum Daily		
		2001-2005	Limit lbs/Day	Percent of Limit	2001-2005	Limit lbs/Day	Percent of Limit
BOD <sub>5</sub>	lb./Day	32.7	255	12.8	171	510	33.5
TSS	lb./Day	116.7	315	37	549	630	87.1
Phosphorus	mg/L	5.7	NA		21.8	NA	
Critical Season Temperature (July 1 to September 30) 2001-2004							
Cumulative Average		22.2 °C (72 ° F)		Maximum Daily		24.4 °C (76 °F)	



## PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based on past performance as reported in the Permittee's Discharge Monitoring Reports (DMRs) from April 2001 through August 2004. The effluent constituents in the discharge were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

## DESIGN CRITERIA

In accordance with WAC 173-220-150(1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the most recent 1999 engineering report prepared by Esvelt Environmental Engineering and are as follows in Table 2.

**Table 2: Average Design Capacity**

Parameter	Design Quantity
Monthly average flow	1 MGD
BOD <sub>5</sub> influent loading	19,000 lbs/day
COD influent loading	31,000 lbs/day

## TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Federal law allows the state to impose more stringent technology-based effluent limits than EPA has promulgated. The proposed permit will impose technological limitations, which will replace categorical mass limitations and concentration limitations established in 1994 PCHB agreement. The most stringent of the regulatory methods of calculation will be used for this permit.

The Federal Water Pollution Control Act of 1972 (Clean Water Act) directed the Environmental Protection Agency (EPA) to develop standards of performance for industrial categories. The law required existing industrial dischargers to achieve "effluent limitations requiring the application of the best practicable control technology currently available (BPT)".

Federal effluent guidelines have been considered to determine effluent limits for the various fruits processed at the Snokist Growers Terrace Heights Cannery. Specific sections are 40 CFR Part 407.22, Federal Effluent Guidelines for Best Practicable Technology (BPT) for the Apple Products Subcategory (Subpart B) which was promulgated in March of 1974 and amended in June of 1995 and Part 407.62 for Canned and Preserved Fruit Subcategory (Subpart F) which was promulgated in April 1976 and amended in June of 1995. It is important to note that only the headings were amended in 1995. The guideline values used however are the original ones promulgated in 1974 and 1976. Effluent limitations for this permit have been evaluated through analyses of the total tonnages of the types of fruit that are processed at the Snokist Cannery.

### Rationale for Performance Based Technology Limits

The Water Pollution Control Act of the State of Washington requires the use of "All Known and Available and Reasonable methods of Prevention, Control and Treatment" (AKART) for discharge of pollutants to waters of the state. Chapter 90.48 RCW, section 520, states that "...the Department of Ecology shall, in issuing and renewing state and federal wastewater discharge permits review the applicant's operations and incorporate permit conditions which require all known, available, and reasonable methods to control toxicants in the applicant's discharge."

An implementing regulation, Chapter 173-201A, "Water Quality Standards for Surface Waters of the State of Washington," defines AKART as representing "...the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge."

The rationale for updating the limits is as follows:

- The Department's Permit Writer's Manual, a guidance document for drafting wastewater discharge permits states (pp. IV-28-34): *"If the federal effluent limit guidelines are over 10 years old, the permit writer should do at the least an analysis of unit process design and efficiencies to determine that the effluent guidelines constitute AKART"*. The mass

limitations imposed under 40 CFR Part 407.62 (Subpart F), 407.22 and 407 Subpart B were originally promulgated in 1976. They are nearly 30 years old and do not reflect the performance standards common to similar permitted industries in the region or the past performance of the Permittee. The guidelines contained in 40 CFR Part 407 do not constitute AKART. The Permit Writer's Manual cites Chapter 90.48 RCW which allows permit writers to determine performance based limits for BOD and TSS.

- To determine AKART for BOD and TSS, the existence of historic and comparative performance of a pollution control facility allows the permit writer to base permit limits and conditions on a statistical evaluation of facility-specific performance. A limit based on demonstrated performance of the clarifier and aeration system at the facility is an AKART limit.
- The current permit is unnecessarily complex which compromises verification of compliance with the limitations.

The pear harvest begins early, and pears can be processed at the same time as all other fruits with the exception of cherries. For this reason the pear limitations in the current permit were used to establish the limitations for the period of fruit processing from August through December. The Permittee stated that they also process up to 270 tons of plums around September 10 to October 7 during the pear "season". For June and July, the cherry processing season limitations were used to establish limitations for the Snokist discharge. For the period from January through May the BPT apple processing allocation applies to 200 tons per day, which reflected the rate of raw material consumed prior to promulgation of 40 CFR 407 Subpart B. An additional 175 tons per day of apples used, as reported in the updated 2001 permit application, was allocated under New Source Performance Standards, NSPS.

In the current permit, allocations for pears and apples were added together to calculate limitations for the August to November time frame while plums were left out of the equation altogether. This combining of fruit specific seasons was done to simplify the compliance aspects of the permit. As harvest times and fruit availability changes from year to year it is difficult at best to apply limits that can be fixed to a calendar date over the course of a 5 year permit. The Departmental data base that alerts permit managers of a violation is not equipped to handle shifting limits based on the uncertainties of fruit harvests and processing.

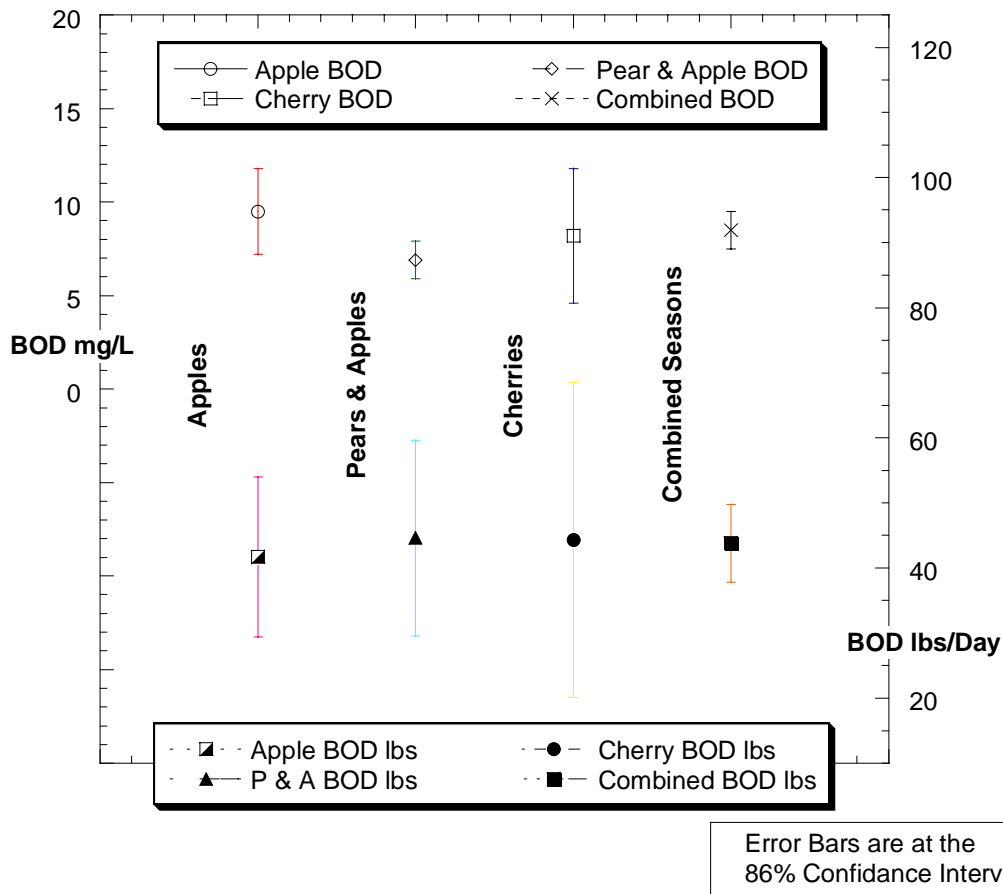
Residence time in the wastewater treatment system further confounds the problem of assuring compliance with the permit. Waste streams are mixed for a period of time. A difficult to treat waste like pears, which has a correspondingly higher allocation, will reside with a more treatable waste with a lower allocation. It is highly conceivable that violations could occur if a sample was taken in a low allocation season ascribed to a calendar date even though a high allocation waste is part of the waste stream. On

the other hand, if the situation is reversed, violations would go undetected. In addition mass loading which are calculated by an equation requiring accurate measurement of the effluent flow, require an effluent flow meter which to date has not been required. Effluent flow has historically been estimated using the metered influent flow to the treatment system.

The graphical analysis below was conducted using data supplied by the Permittee that is in addition to DMRs. The data examined covers up to the past four years. The data suggests that instead of multiple limitations based on processing season, one limit can be applied throughout the year which will greatly simplify verification of compliance with the permit for both the Department and Permittee.

Figure 1 depicts a statistical analysis of four years of BOD data that has been segregated into three distinct processing seasons and a three year cumulative average encompassing all seasons throughout the year. The error bars around the individual means are based on the 86% confidence interval.

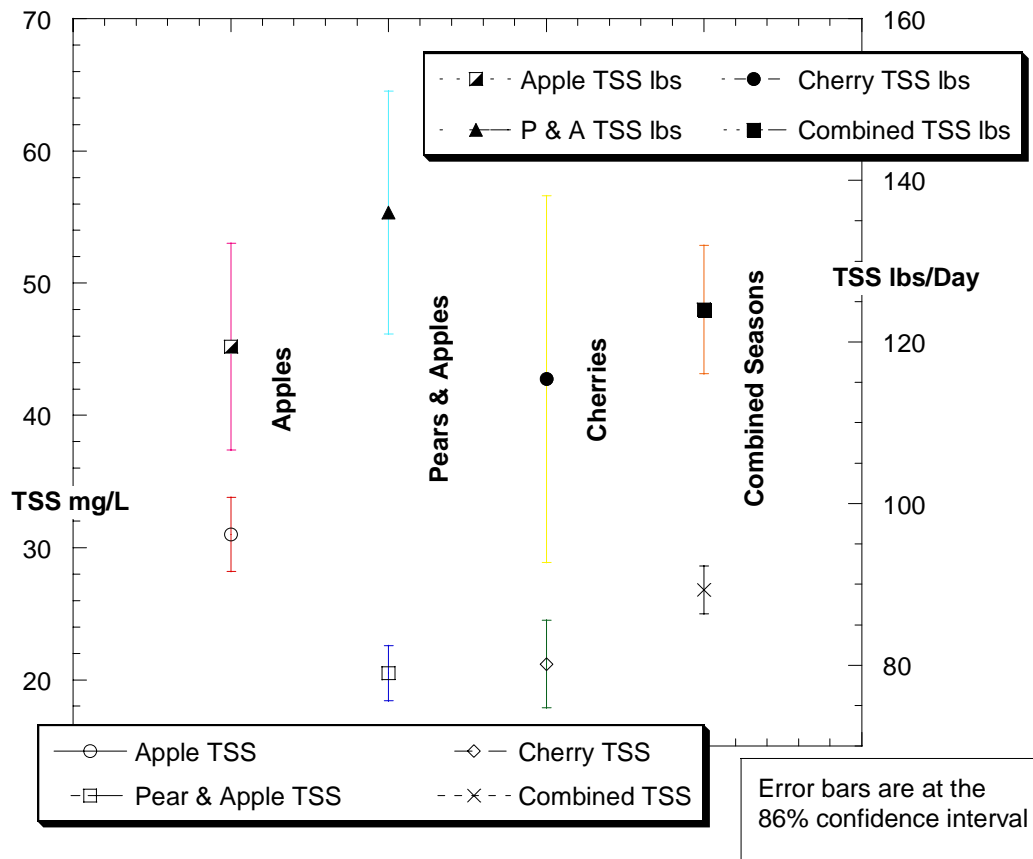
**Figure 1: 4 Years Combined Seasons vs Discrete BOD Seasonal Averages  
Over a 3 Year Period**



Statistically there is no difference among the individual processing seasons for the BOD mass loading data and among BOD effluent concentration data. This is indicated by the overlapping of the error bars, which means all seasons are essentially from the same data set. Therefore a limit based on the cumulative record is appropriate.

Figure 2 depicts TSS data collected over the same time frame as the above BOD data. As with the above BOD analysis, individual processing seasons and a cumulative average are considered at the 86% confidence interval.

**Figure 2: 4 Years Combined Seasons vs Discrete TSS Seasonal Averages  
Over a 3 Year Period**



The TSS lbs/Day data indicates there is statistically no difference among the individual processing seasons as indicated by overlap of the 86% confidence intervals. The concentration data does show that the pear/apple season and the cherry season is significantly lower than the apple season, however the combined seasons average is statistically the same and subsequently a limit based on the cumulative record for either mass loading or concentration is appropriate.

- The mass loading limits are unnecessarily generous, which have the potential to negatively impact the receiving water unnecessarily.

It is the permit writer's opinion, that adding or subtracting categorical allocations for individual fruit, which have established categorical limitations in order to fit a specific time frame, ignores the intent of the law. Apples and plums are allocated

limitations which are considerably lower than pears. To apply the more lenient pear limitation to apples and plumes does not assure the wastewater is being processed with the best practicable control technology. Adding the allocation for apples to an already high allocation for pears only serves to lower the expectations of any best practicable control technology performance.

Table 3 contains the BOD and TSS mass loading limits with the corresponding performance compiled for the past three years of discharge. The performance is expressed as a percent of the limit for the combined pear and apple season.

**Table 3: Mass Loading Limitations with Performance  
Expressed as a Percent of the Limit**

<b>Maximum Daily Limit</b>	<b>Highest Maximum Daily Reported <sup>1</sup></b>	<b>Percent of Limit</b>
2,370 lbs/Day BOD	199 lbs/Day BOD	8.4
4,000 lbs/Day TSS	1348 lbs/Day TSS	33.7
<b>Average Monthly Limit</b>	<b>Highest Average Monthly Reported</b>	<b>Percent of Limit</b>
1,431 lbs/Day BOD	100 lbs/Day BOD	7.0
2,751 lbs/Day TSS	379 lbs/Day TSS	13.8

<sup>1</sup> Compiled from the DMRs from March 2001 thru August 2004

The data presented in Table 3 demonstrates the extent to which the limitations are not in line with performance. The intent of the Clean Water Act was to insure continuing improvement in wastewater treatment technology to protect the water resources of the country.

- The current relevance of the 1994 settlement agreement is questionable. The settlement agreement is over ten years old. The 1999 Wastewater Treatment and Disposal System Engineering Report listed numerous improvements in equipment and procedures that are now in place. The conditions that previously necessitated the high concentration limitations no longer exist.

Table 4 contains the BOD and TSS concentration limits established in 1994 with the corresponding performance compiled for the past 3 years of discharge. The performance is expressed as a percent of the limit for the combined pear, plum and apple season.

**Table 4: 1994 Concentration Limitations Established by Agreement  
Between the Permittee and the Department with  
Performance Expressed as a Percent of the Limit**

<b>Maximum Daily Limit</b>	<b>Highest Maximum Daily Reported <sup>1</sup></b>	<b>Percent of Limit</b>
120 mg/L BOD	38 mg/L BOD	31.7
500 mg/L TSS	180 mg/L TSS	36.0
<b>Average Monthly Limit</b>	<b>Highest Average Monthly Reported</b>	<b>Percent of Limit</b>
80 mg/L BOD	38 mg/L BOD	47.5
250 mg/L TSS	130 mg/L TSS	52.0

<sup>1</sup> Compiled from the DMRs from March 2001 thru August 2004

### Calculation of Performance-Based Limitations

The previous discussion outlined the problems associated with verifying compliance of mass loading limits accurately. The limits are derived using multiple categorical allocations that overlap because they are tied to harvest times which vary from year to year. Performance-based limits based on concentration at this time are more protective of the waters of the State. They greatly simplify the permit and aid in verifying compliance without committing the Permittee to costly upgrades or engineering reports.

TSS and BOD limitations are based on the wastewater treatment performance as reported by the Permittee from June 2000 through April 2005. This data set covers approximately five years of data where normally three years of data is considered when reissuing a permit. The Department, in response to the Permittee's request, extended the data set to allow for variations in fruit quality year to year. The 95<sup>th</sup> percentile for BOD and TSS was calculated from that data set. The 95<sup>th</sup> percentile value expresses the Average Monthly limit for BOD and TSS. The Maximum Daily limit was calculated from the same data set; however the data were log normal transformed. Following log normal smoothing the variance and mean were entered into the Department's spreadsheet to determine the Maximum Daily limitation. This method was used to allow the Permittee ample compliance overhead to account for a harvest of poor quality fruit. Data collected during the upcoming permit cycle will be used to recalculate new performance based limitations for the next permit term. The data and the subsequent analysis are contained in Appendix C.

**Table 5: Performance-Based Limitations**

<b>Average Monthly</b>		<b>Maximum Daily</b>	
Based on the 95 <sup>th</sup> Percentile		Based on Log Transformed Data	
BOD	28.4 mg/L	BOD	43.1 mg/L
TSS	101 mg/L	TSS	180 mg/L



The TSS and BOD limitation are concentration-based only, due to the lack of an effluent meter. The need for mass loading limits will be evaluated at the next permit renewal.

## **SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS**

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a State regulation designed to protect the beneficial uses of the surface waters of the State. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL). In the event a wasteload allocation is imposed during the proposed permit period new limits may be imposed by either permit modification or permit reissuance.

### **Numerical Criteria for the Protection of Aquatic Life**

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

### **Numerical Criteria for the Protection of Human Health**

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

### **Narrative Criteria**

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

### **Antidegradation**

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the waterbody. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this waterbody in the proposed permit. The discharges authorized by this permit should not cause a loss of beneficial uses.

### **Critical Conditions**

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic waterbody uses.

### **Mixing Zones**

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

A diffuser has been demonstrated to be difficult to maintain due to the shifting and migrating streambed. As a consequence river conditions limit the discharge to a sidebank discharge which is ineligible for the establishment of a mixing zone. In addition, the facility will be required to create and implement Best Management Practices to minimize chlorine usage within the plant and demonstrate dechlorination is operating effectively to satisfy AKART.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

### **Description of the Receiving Water**

The facility discharges to Lower Yakima River, which has been designated as a Class 5, impaired waterbody. The Lower Yakima River below Union Gap has been listed as of 1998 for the following parameters:

4,4'-DDD, 4,4'-DDE, DDT, Dieldrin, Endosulfan, Chlordane, PCB-1260, Dioxin, arsenic, mercury, silver, turbidity, in-stream flow as well as pH and temperature.

Other nearby point source outfalls includes, City of Yakima Wastewater Treatment Plant. Significant nearby non-point sources of pollutants include stormwater runoff from the cities of Terrace Heights and Yakima.

Characteristic uses include the following:

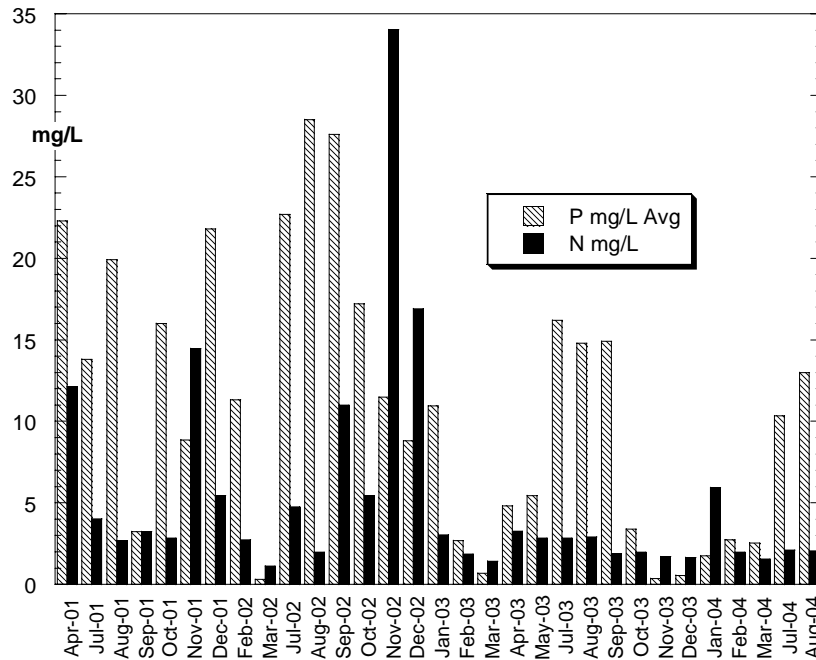
water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

The new annual regulated low flow used was 908 cfs as opposed to 632 cfs. The higher flow reflects changes made by the Yakima River Basin Water Enhancement Program (YRBWEP) as of 1995.

### **TMDL Considerations**

There is a Total Maximum Daily Load (TMDL) pending for the Lower Yakima River which may include wasteload allocations for phosphorus, nitrogen or both. Phosphorous and nitrogen can be limiting factors in plant growth, which has a direct effect on pH in the water column. This phenomenon has the potential to affect the Permittee's discharge limitations at some time in the future. At this time it is unknown whether a wasteload allocation for phosphorus (P) or nitrogen (N) will be established for the Permittee's facility. Figure 3 depicts the concentration of N & P in the Snokist effluent discharged to the Yakima River. Although there are no specific permit limitations regarding phosphorus or nitrogen in the permit at this time, the Permittee may wish to reduce excess nutrient loading to the river in advance of any restrictions that may accompany the pending TMDL. For example over the past three years N loading in the discharge averaged 19 lbs/Day with a maximum of 142 lbs/Day and P loading averaged 43 lbs/Day with a maximum of 174 lbs/Day. Monitoring for P and N will be required in the proposed permit.

Figure 3: Average Monthly Phosphorous and Nitrogen Concentrations



### Surface Water Quality Criteria

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

**Table 6: Applicable Water Quality Criteria**

Parameter	Criteria
Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	21 degrees Celsius maximum or incremental increases above background
pH	6.0 to 9.0 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

### **Consideration of Surface Water Quality-Based Limits for Numeric Criteria**

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at the regulated low flow of 908 cfs.

WAC 173-201A-130(141) allows a special condition for maximum temperature for this reach of the Yakima River of 21° C. Assuming the receiving water temperature at the critical season is 21° C and the maximum effluent temperature is 24.4° C. The predicted resultant temperature using 25% of the critical season flow of 908 cfs is 21.021° C. The incremental rise with an ambient river temperature of 21 °C is then 0.021° C, which is well below the allowed 1.33° C determined by the following formula:

$$T = 34 / (21 + 9)$$
$$T = 1.33 > 0.021$$

When natural conditions exceed 21.0°C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C. The predicted temperature rise with an ambient river temperature of 23°C is 0.009°C.

$$0.009^{\circ}\text{C} < 0.3^{\circ}\text{C}$$

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, an effluent limitation for temperature of 24.4° C was placed in the proposed permit based upon the Department's best professional judgment.

pH--Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. The last four years of DMR data demonstrates all discharges have been within the Water Quality Standards for Surface Waters. Therefore, the Technology Based pH Limitations will remain in effect.

Toxics-- The discharge contains two potentially toxic pollutants: chlorine and ammonia. The limits are based on existing demonstrated performance.

The current permit has no limit for chlorine. In the absence of a mixing zone, the Permittee must meet the surface water standard of 19 µg/L at the edge of the chronic mixing zone or at the “end of pipe” in this case. At the time the current permit was written and because of a lack of available data, it was surmised the relatively warm temperature of the can cooling water, the dilution effect of the combined wastewater stream, and length of travel (1800 ft) to the outfall would remove any detectable level of chlorine in the discharge. Required monitoring has revealed that this is not the case. Therefore, while the Permittee completes a three year Schedule of Compliance leading to compliance with the Water Quality Standards, interim limits for chlorine will be imposed. Final limitations will be applied no later than the end of the three year interim limit period.

It is the Best Professional Judgment of the Permit Writer that an interim chlorine concentration limitation based on the 90<sup>th</sup> percentile of the past three years monitoring results is appropriate. The rationale for this is that given the toxicity of chlorine and the low level of chlorine allowable as per the surface water criteria (acute 19 µg/L and chronic 11µg/L) the 95<sup>th</sup> percentile of 229 µg/L chlorine is much too high. The final concentration limit is 19 µg/L chlorine. The Method Detection Level for Method 330.5 is 0.018 mg/L. The Quantitation Level is 0.09 mg/L. Exceedances of the 19 µg/L limit will not constitute an enforceable violation until the reported concentration meets or exceeds 5 times the detection level, the Quantitation Level of 0.09 mg/L.

The chlorine limitations are displayed in the table 7 below:

**Table 7: Surface Water Quality Based Limitations**

<b>Chlorine Discharge Limitations</b>	
<b>Interim Limitations</b>	<b>Final Limitations</b>
<b>µg/L</b>	<b>µg/L</b>
182	19

Neither a limit nor monitoring requirement for ammonia is contained in the current permit. The proposed permit will not contain a limit. However, since ammonia is applied as a bacterial nutrient in the treatment system, monitoring for ammonia in the discharge will be required in the proposed permit.

**COMPARISON OF THE PROPOSED EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED JUNE 22, 1993**

PARAMETER	EXISTING LIMITS			PROPOSED LIMITS
Flow MGD	no limit			no limit
Temperature °C	24.4 Max			24.4 Max
pH Std Units	6.0 to 9.0 at all times			6.0 to 9.0 at all times
BOD mg/L	80 Avg. Mo., 120 Max. Day			28.4 Avg. Mo., 43.1 Max Day
TSS mg/L	250 Avg. Mo., 500 Max. Day			101.1 Avg. Mo., 180.8 Max. Day
Interim Residual Chlorine µg/L	No Limit			182 Maximum Day
Final Residual Chlorine µg/L	No Limit			19 Maximum Day <sup>a</sup>
Season	BOD lbs/Day			
Cherries, June-July	Max Day 224	Mo. Avg. 138	Annual Avg. <sup>1</sup> 98	BOD Mass limits not applied
Pears, Plums & Apples, Aug.-Nov.	Max Day 2370	Mo. Avg. 1431	Annual Avg. 1089	
Apples <sup>1</sup> Sept.-May	Max Day 510	Mo. Avg. 255	Annual Avg. 255	
Season	TSS lbs/Day			
Cherries, June-July	Max Day 402	Mo. Avg. 286	Annual Avg. 184	TSS Mass limits not applied
Pears, Aug.-Nov.	Max Day 4,000	Mo. Avg. 2,751	Annual Avg. 1,896	
Apples <sup>1</sup> Sept.-May	Max Day 630	Mo. Avg. 315	Annual Avg. 315	

<sup>a</sup> Quantitation level of 0.190 mg/L is the enforcement level.

**Whole Effluent Toxicity**

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests

measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

In accordance with WAC 173-205-040 (4), the Permittee's effluent contains toxic chemicals. However, wet testing will not be required at this time. The Permittee is required to address chlorine residuals under a schedule of compliance leading to residual chlorine through BMPs and ammonia data will be collected to determine reasonable potential during the proposed permit cycle. The need for wet testing will be re-evaluated at time of permit reissuance.

### **Human Health**

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the State by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health.

### **Sediment Quality**

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

### **GROUND WATER QUALITY LIMITATIONS**

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no permitted discharge to ground; therefore, no limitations are required based on potential effects to ground water. The Permittee formerly discharged to a sprayfield but the sprayfield has not been utilized since the 1991-1992 process season and according to the treatment plant operator the sprayfield is no longer available to Snokist. Therefore, the proposed permit will not authorize any sprayfield discharge.



## MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

The monitoring requirements for the proposed permit period will for the most part remain unchanged from the current permit with a few exceptions which are: COD will no longer be required as a DMR submittal. The chlorine monitoring frequency at the outfall will be increased to once a week to assure compliance with the new limit. To assure that dechlorination is functioning within the correct range, sulfates will be monitored following dechlorination once a week along with chlorine sampling at the outfall. Ammonia and Phosphorous are used as a nutritional source of nitrogen and phosphate for the treatment system biologicals, which if used in excess has either the potential to reach the river in toxic amounts as in the case of ammonia or contribute to excessive plant growth in the river as in the case of excess N and P. Ammonia, Nitrogen (N) and Phosphorus (P) will be monitored once a week. The Permittee may request the Department reduce the monitoring frequencies after a period of one year. The Department may grant the request if the Permittee has demonstrated significant progress in reducing the level of pollutants reaching the waters of the state.

There are two monitoring points where effluent is sampled. TSS, BOD, P, N, and Ammonia which are primarily the result of the wastewater treatment plant operation are to be sampled as the effluent exits the clarifier and prior to dilution with can cooling water. Chlorine, Sulfates, Dissolved Oxygen and Temperature are influenced by operations at the can cooling line, the wastewater treatment plant effluent, and the length of pipe from the plant to the river. The combined flow therefore will be monitored at the outfall.

Additional monitoring points will be determined by the Permittee as part of the required Draft Monitoring Plan associated with the development of BMPs for can sanitation leading to chlorine residual reduction.

The Permittee will be required to use the official DMR template that the Department will provide with the newly issued permit.

## LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for

General Chemistry: BOD, Chemical Oxygen Demand (COD), Dissolved Oxygen (D.O.), Total Kjeldahl Nitrogen (TKN) and Total Suspended Solids (TSS).

## **OTHER PERMIT CONDITIONS**

### **REPORTING AND RECORDKEEPING**

The provisions of Special Condition S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

### **SPILL PLAN**

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and Chapter 90.48 RCW.

The Permittee has developed a plan for preventing the accidental release of pollutants to State waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

### **SOLID WASTE PLAN**

The Department has determined that the Permittee has a potential to cause pollution of the waters of the State from leachate of solid waste.

This proposed permit requires, under the authority of Chapter 90.48 RCW, that the Permittee update the Solid Waste Plan designed to prevent solid waste from causing pollution of the waters of the State. The plan must be submitted to the Department, and to the local permitting agency for approval, if required by local ordinance.

### **TREATMENT SYSTEM OPERATION AND MAINTENANCE MANUAL**

The proposed permit contains Special Condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

In accordance with State and Federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system, 40 CFR 122.41(e) and WAC 173-220-150 (1)(g). A Treatment System Operation and Maintenance Manual, (TSO&M), will be submitted as required by State regulation (WAC 173-240-150). It has been determined that the implementation of the procedures in the TSO&M is a reasonable measure to ensure compliance with the terms and limitations in the permit. Furthermore, a section in the TSO&M Manual will be required to specifically address Best Management Practices for plant sanitation and dechlorination.

### **SCHEDULE OF COMPLIANCE FOR BMP POLLUTION PREVENTION PLAN**

To improve water quality, the Clean Water Act provides for water pollution controls, such as Best Management Practices, to supplement effluent limitations guidelines. Pursuant to RCW 90.48 and 40 CFR 122.44(k), Best Management Practices, BMPs, may be incorporated as permit conditions. In the context of the NPDES program, BMPs are actions or procedures to prevent or minimize the potential for the release of pollutants or hazardous substances in significant amounts to surface waters. Washington State law (RCW 90.48.010 and RCW 90.48.520) allows state permit writers to utilize appropriate spill prevention requirements as permit conditions.

The Pollution Prevention Plan, as part of the approved TSO&M Manual, will be required to contain BMP's for the routine sanitation of processing equipment that will minimize the use of toxics, and contain procedures for the neutralization of toxics prior to discharge to either the facility treatment plant or to the river.

At the time the existing permit was written little or no residual chlorine was expected to reach the outfall. Monitoring over the course of the current permit cycle has shown this not to be the case. While it is believed this is the case with the container cooling water, where a consistently uniform low chlorine dosage and flow regime allows for targeted automatic set point dechlorination, other sources of chlorine, such as sanitation pass through, were not expected.

The 95<sup>th</sup> percentile for residual chlorine in the Permittee's discharge is 228 µg/L over the last three years. This excess may be attributable to excessive usage or improper dosage of chlorine containing cleaning compounds during plant sanitation coupled with design problems in the dechlorination system. It is the understanding of the Department that the plant operator needs to maintain a small lagoon for storage of micro-organisms to reseed the system following catastrophic failure of the organic system brought on by chlorine poisoning. To the treatment plant operator's credit, the treatment plant has consistently been able to produce effluent well below the conventional pollutant limitations in spite of the near chronic upset condition caused by poor chlorine control.

The average residual chlorine concentration measured at the outfall for the period of April 2001 through August 2004 is 92 ug/L with a maximum concentration of 290 ug/L in the same time

frame. The 90<sup>th</sup> percentile chlorine concentration is 182 ug/L, which will constitute the interim limit for residual chlorine.

The Permittee is required to develop and implement a Pollution Prevention Plan that will include:

- Assessment of current inventory to identify opportunities to improve control procedures to minimize chlorine use.
- Development of a residual chlorine monitoring plan designed to identify problem areas and assess corrective measures.
- Develop Best Management Practices for the sanitation process, employee training, chemical inventory, and batch make-up process to achieve substantial and consistent chlorine use reduction.
- Re-evaluate the dechlorination system, develop procedures for recalibration of the dechlorination system and develop contingency plans for re-engineering, if necessary.

The Schedule of Compliance (S1.C.) will require the Permittee to submit periodic updates and a monitoring plan for approval to assure the Department the process is moving forward.

## **COMBINED DISCHARGE FLOW METER INSTALLATION**

Special Condition S8 will require the Permittee to develop an installation plan, drafted by a licensed engineer, and install a flow meter to accurately measure the combined wastewater discharge to the Yakima River.

## **GENERAL CONDITIONS**

General Conditions are based directly on State and Federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

## **PERMIT ISSUANCE PROCEDURES**

### **PERMIT MODIFICATIONS**

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended State or Federal regulations.

## RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

## REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

- 1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
- 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
- 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
- 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
- 1983. Water Quality Standards Manual. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

- 1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

- 1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations( <http://www.ecy.wa.gov/laws-rules/index.html> )  
Permit and Wastewater Related Information  
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Wright, R.M., and A.J. McDonnell.

- 1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

## **APPENDIX A -- PUBLIC INVOLVEMENT INFORMATION**

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on August 16, 2001 in the Yakima Herald Republic to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on October 14, 2005 in the Yakima Herald Republic to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30 day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/457-7105, or by writing to the address listed above.

This permit and fact sheet was written by Richard A. Marcley.

## APPENDIX B -- GLOSSARY

**Acute Toxicity**--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

**AKART**-- An acronym for "all known, available, and reasonable methods of prevention, control and treatment".

**Ambient Water Quality**--The existing environmental condition of the water in a receiving waterbody.

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation** --The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**--The intentional diversion of waste streams from any portion of a treatment facility.

**Chlorine**--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

**Chronic Toxicity**--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

**Clean Water Act (CWA)**--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

**Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring** --Uninterrupted, unless otherwise noted in the permit.

**Critical Condition**--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a waterbody is low, thus, its ability to dilute effluent is reduced.

**Dilution Factor**--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

**Engineering Report**--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.



**Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a waterbody can indicate the recent release of untreated wastewater and/or the presence of animal feces.

**Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Major Facility**--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Maximum Daily Discharge Limitation**--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Minor Facility**--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Mixing Zone**--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

**National Pollutant Discharge Elimination System (NPDES)**--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Quantitation Level (QL)**-- A calculated value five times the MDL (method detection level).

**Responsible Corporate Officer**-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

**State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

**Stormwater**--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface waterbody, or a constructed infiltration facility.

**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**Upset**--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

**Water Quality-based Effluent Limit**--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C -- TECHNICAL CALCULATIONS

	<b>Temperature Mass Balance Model @ 25% of 908 CSF Regulated Flow</b>			
CHRONIC DILUTION				
<b>eff flow</b>	<b>effluent temp</b>	<b>River csf</b>	<b>ambient temp</b>	<b><u>final temp</u></b>
1.39	24.4	227	23	23.009
<b>Allowable increase 0.3°C</b>			<b>Predicted Increase</b>	
			<b>0.051 °C</b>	

	Temperature Mass Balance Model			
CHRONIC DILUTION				
effluent csf	effluent temp	River csf	ambient temp	<u>final</u> <u>temp</u>
1.39	24.4	227	21	21.010
Temperature Increase Limit t=34/(21+9) = 1.133			Predicted Increase	
			0.010 °C	

**The data on the following pages was used to demonstrate the rationale for one set of TSS and BOD limitations. The timeframe analyzed covers four years from April 2001 to April 2005.**

Snokist Growers Cannery Wastewater Treatment Plant Effluent Data - 2001-2005  
Monthly Reports

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Apr-01	46	143.5			Sep-01	7	31.8		
Apr-01	33	103.5			Sep-01	6	30.9	2	10.3082
Apr-01	36	60.6			Sep-01	5	27.0		
Apr-01	30	45.0			Sep-01	5	26.8		
Apr-01	24	37.2	7	10.859	Sep-01	8	29.5		
Apr-01	24	20.4			Sep-01	9	28.7		
Apr-01			5	3.2526	Sep-01	9	38.3	4	17.0136
Jul-01	16	72.3			Sep-01	8	29.2		
Jul-01	24	88.1			Sep-01	8	28.0		
Jul-01	94	343.4	24	87.67	Sep-01	7	25.8		
Jul-01	60	277.2			Sep-01	8	27.2		
Jul-01	31	160.3			Sep-01	9	30.6	3	10.2082
Jul-01	17	95.3			Sep-01	8	21.2		
Jul-01	17	96.4			Sep-01	8	32.7		
Jul-01	17	97.5	5	28.69	Sep-01	6	27.7		
Jul-01	16	86.7			Sep-01	7	35.8		
Jul-01	15	86.3			Sep-01	7	35.3	5	25.1868
Jul-01	14	42.0			Sep-01	7	44.1		
Jul-01	18	81.4			Sep-01	7	37.2		
Jul-01	20	13.7			Oct-01	6	40.6		
Jul-01	23	57.9	7	17.631	Oct-01	5	37.2		
Aug-01	17	67.5			Oct-01	4	28.5	3	21.3671
Aug-01	10	48.9			Oct-01	5	34.3		
Aug-01	6	31.9	2	10.642	Oct-01	5	37.7		
Aug-01	8	43.9			Oct-01	12	100.3		
Aug-01	8	39.0	4	19.482	Oct-01	12	79.7		
Aug-01	7	32.1			Oct-01	10	77.4	4	30.9581
Aug-01	5	24.6			Oct-01	9	66.1		
Aug-01	7	33.2			Oct-01	8	55.6		
Aug-01	7	41.9			Oct-01	11	86.4		
Aug-01	6	31.5	3	15.763	Oct-01	12	94.5		
Aug-01	4	21.3			Oct-01	12	97.9	5	40.7826
Aug-01	2	10.3			Oct-01	12	99.1		
Aug-01	8	40.6			Oct-01	13	109.1		
Aug-01	9	54.8			Oct-01	22	180.5		
Aug-01	9	46.8	4	20.817	Oct-01	25	217.3		
Aug-01	8	45.4			Oct-01	30	253.2	8	67.5206
Aug-01	7	36.2			Oct-01	34	286.4		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
Oct-01	36	303.2			Feb-02	42	156.9	10	37.363
Oct-01	62	399.2			Feb-02	45	148.6		
Oct-01	50	421.2			Mar-02	48	144.1		
Oct-01	47	402.2	15	128.35	Mar-02	39	87.2		
Nov-01	47	372.4			Mar-02	40	101.4		
Nov-01	47	373.9			Mar-02	42	93.9	10	22.351
Nov-01	45	322.0			Mar-02	46	89.8		
Nov-01	51	353.0			Mar-02	52	112.8		
Nov-01	60	428.3	16	114.22	Apr-02			7	0
Nov-01	61	482.3			Jul-02	49	230.5		
Nov-01	63	525.4			Jul-02	38	176.8		
Nov-01	59	471.4			Jul-02	29	113.2		
Nov-01	60	511.4			Jul-02	24	89.7		
Nov-01	61	496.5	14	113.96	Jul-02	17	72.3	7	29.774
Nov-01	64	550.8			Jul-02	21	84.4	6	24.119
Nov-01	65	580.0			Jul-02	54	208.1		
Nov-01	68	603.4			Aug-02	47	142.7		
Nov-01	64	566.9			Aug-02	30	103.6		
Nov-01	59	241.1	12	49.039	Aug-02	13	47.3	10	36.362
Nov-01	47	199.1			Aug-02	10	39.6		
Nov-01	60	255.2			Aug-02	7	29.2		
Nov-01	75	202.7	21	56.745	Aug-02	5	18.1		
Nov-01	90	432.3			Aug-02	5	19.5		
Nov-01	106	498.6			Aug-02	5	21.7	4	17.347
Dec-01	117	179.5			Aug-02	3	13.1		
Dec-01	130	127.9			Aug-02	2	8.3		
Dec-01		321.9	38	84.935	Aug-02	18	72.4		
Dec-01	131	179.2			Aug-02	8	34.2		
Dec-01	126	220.7			Aug-02	5	22.3	3	13.386
Dec-01	144				Aug-02	6	29.0		
Feb-02	112	401.7			Aug-02	7	32.7		
Feb-02	118	442.9			Aug-02	10	42.7		
Feb-02	120	440.4			Aug-02	12	55.2		
Feb-02	129	649.8	34	171.27	Aug-02	12	55.8	3	13.961
Feb-02	109	400.0			Aug-02	14	68.2		
Feb-02	89	302.8			Aug-02	15	72.6		
Feb-02	85	290.6			Sep-02	16	77.9		
Feb-02	81	282.4	19	66.236	Sep-02	18	99.7	7	38.764
Feb-02	79	291.2			Sep-02	18	98.3		
Feb-02	77	276.1			Sep-02	18	115.6		
Feb-02	70	256.9			Sep-02	25	192.2		
Feb-02	61	206.5	14	47.405	Sep-02	29	191.6		
Feb-02	54	184.6			Sep-02	30	163.1	8	43.501
Feb-02	45	161.4			Sep-02	34	180.9		
Feb-02	46	165.0			Sep-02	37	210.5		
Feb-02	44	162.9			Sep-02	53	325.3		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Sep-02	55	369.7			Nov-02	25	127.2		
Sep-02	56	342.8	14	85.702	Nov-02	31	40.1	8	10.342
Sep-02	55	359.6			Dec-02	14	25.9		
Sep-02	54	392.7			Dec-02	18	19.8		
Sep-02	69	512.2			Dec-02	20	33.7	7	11.793
Sep-02	80	617.8			Dec-02	24	26.4		
Sep-02	89	708.1	22	175.04	Dec-02	26	43.4		
Oct-02	118		30	199.16	Jan-03	32	98.7	6	18.515
Oct-02	72	409.5			Jan-03	30	98.1		
Oct-02	42	276.0			Jan-03	30	100.1		
Oct-02	35	238.2			Jan-03	16	53.9		
Oct-02	27	199.1	8	58.98	Jan-03	20	66.4		
Oct-02	25	187.2			Jan-03	23	79.8	5	17.347
Oct-02	23	143.5			Jan-03	26	56.4		
Oct-02	38	213.6			Jan-03	28	65.4		
Oct-02	34	209.3			Feb-03	39	130.8		
Oct-02	27	166.2	8	49.239	Feb-03	28	84.1	5	15.012
Oct-02	22	149.4			Feb-03	22	68.3	7	21.717
Oct-02	17	111.4			Feb-03	26	91.1		
Oct-02	19	121.1			Feb-03	29	58.0		
Oct-02	20	143.4			Mar-03	23	69.8	4	12.143
Oct-02	20	131.8	6		Mar-03	24	72.1		
Oct-02	22	138.7			Mar-03	24	72.9		
Oct-02	23	130.4	8		Mar-03	21	27.3	3	3.9031
Oct-02	42	319.5			Mar-03	18	22.8		
Oct-02	28	234.9			Mar-03	15	21.3		
Oct-02	15	115.1	4		Mar-03	27	32.4	5	6.0048
Oct-02	16	116.1			Mar-03	32	24.6		
Nov-02	17	124.8			Mar-03	36	45.0		
Nov-02	38	311.8			Apr-03	33	25.3	6	4.6037
Nov-02	30	250.7			Apr-03	32	32.6		
Nov-02	22	183.5	6		Apr-03	30	30.0		
Nov-02	30	272.2			Apr-03	16	10.1	5	3.1692
Nov-02	32	264.7			Apr-03	16	31.0		
Nov-02	35	152.4			Apr-03	16	6.0		
Nov-02	30	151.1			Apr-03	13	2.2	2.99	0.4987
Nov-02	27	115.3	11		May-03	14	8.2		0
Nov-02	23	84.0			May-03	13	8.7	3	2.0016
Nov-02	18	73.9			May-03	13	9.8		
Nov-02	18	72.4			May-03	13	10.8		
Nov-02	30	119.1			May-03	12	8.5	3	2.1267
Nov-02	44	161.5	21		Jul-03	36	321.9	18	160.93
Nov-02	40	136.8			Jul-03	30	185.1		
Nov-02	34	119.1			Jul-03	18	109.6		
Nov-02	20	100.4			Jul-03	10	74.1		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Jul-03	9	66.1			Sep-03	4	31.6		
Jul-03	9	63.7	3	21.217	Oct-03	5	37.5	2	15.012
Jul-03	6	43.4			Oct-03	4	30.5		
Jul-03	5	28.8			Oct-03	2	14.6		
Jul-03	9	56.4			Oct-03	9	42.0		
Jul-03	8	53.1			Oct-03	8	47.5		
Jul-03	7	41.2	2	11.776	Oct-03	7	53.9	3	23.118
Jul-03	7	7.1			Oct-03	9	78.2		
Jul-03	9	12.3	3	4.1033	Oct-03	10	84.1		
Jul-03	6	7.3			Oct-03	19	192.4		
Aug-03	13	41.2			Oct-03	12	122.9		
Aug-03	10	47.9			Oct-03	8	90.7	5	56.712
Aug-03	7	33.2	5	23.686	Oct-03	8	85.0		
Aug-03	7	26.9			Oct-03	8	59.5		
Aug-03	6	22.5			Oct-03	15	106.6		
Aug-03	6	23.0			Oct-03	12	94.5		
Aug-03	5	25.0			Oct-03	10	80.7	6	48.439
Aug-03	3	15.8	2	10.508	Oct-03	8	68.2		
Aug-03	3	17.1			Oct-03	8	63.9		0
Aug-03	3	15.6			Oct-03	10	73.9		
Aug-03	8	42.6			Oct-03	10	75.9		
Aug-03	8	44.3			Oct-03	9	67.7	6	45.136
Aug-03	7	35.5	2	10.141	Oct-03	9	72.1		
Aug-03	6	31.0			Oct-03	8	62.3		
Aug-03	5	25.2			Nov-03	13	71.3		
Sep-03	8	44.8			Nov-03	11	74.3		
Sep-03	10	64.9	3	19.466	Nov-03	8	56.8	5	35.528
Sep-03	10	66.7			Nov-03	8	54.8		
Sep-03	10	62.9			Nov-03	6	36.8		
Sep-03	6	35.2			Nov-03	11	85.1		
Sep-03	7	37.5			Nov-03	10	85.1		
Sep-03	7	49.9	4	28.489	Nov-03	8	78.6	7	68.772
Sep-03	8	57.9			Nov-03	9	89.6		
Sep-03	8	59.4			Nov-03	10	89.6		
Sep-03	9	54.9			Nov-03	23	158.8		
Sep-03	6	40.6			Nov-03	20	129.4		
Sep-03	5	29.6	2	11.843	Nov-03	19	123.3	10	64.885
Sep-03	8	54.6			Nov-03	18	116.8		
Sep-03	10	61.3			Nov-03	15	96.1		
Sep-03	10	82.4			Dec-03	52	242.9		
Sep-03	8	64.7			Dec-03	40	204.2		
Sep-03	6	47.7	2	15.913	Dec-03	29	148.0	12	61.249
Sep-03	5	42.2			Dec-03	40	180.8		
Sep-03	3	27.3			Dec-03	45	231.9		
Sep-03	4	31.2			Jan-04	112		31	98.245

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Jan-04					Sep-04	3	16.8		
Jan-04	112		34	126.47	Sep-04	13	65.3		
Jan-04	78	300.5			Sep-04	12	18.4		
Jan-04	75	315.3			Sep-04	10	57.7	4	23.085
Jan-04	70	163.5			Sep-04	45	171.9		
Feb-04	62	316.5			Sep-04	3	8.5		
Feb-04	60	326.3			Sep-04	12	63.5		
Feb-04	50	355.3	15	106.59	Sep-04	14	110.7		
Feb-04	50	358.6			Sep-04	14	126.3	6	54.143
Mar-04	37	174.0			Sep-04	15	88.8		
Mar-04	30	39.5			Sep-04	108	153.1		
Mar-04	20	57.0	3	8.5568	Sep-04	13	75.9	4	23.352
Jul-04	52	399.0			Sep-04	10	51.7		
Jul-04	44	370.6			Oct-04	8	40.0		
Jul-04	34	280.7			Oct-04	24	144.1		
Jul-04	25	216.4			Oct-04	24	192.2		
Jul-04	16	131.6	7	57.563	Oct-04	9	62.3	5	34.611
Jul-04	14	119.8			Oct-04	9	67.6		
Jul-04	11	50.5			Oct-04	9	72.1		
Jul-04	11	42.9			Oct-04	11	84.4		
Jul-04	16	51.5			Oct-04	10	76.3		
Aug-04	20	113.8			Oct-04	9	69.1	4	30.691
Aug-04	18	100.6	7	39.115	Oct-04	7	51.4		
Aug-04	11	68.8			Oct-04	5	34.2		
Aug-04	6	39.8			Oct-04	7	48.5		
Aug-04	8	63.5	5	39.698	Oct-04	3	24.5		
Aug-04	6	40.6			Oct-04	3	26.5	3	26.521
Aug-04	4	33.4			Oct-04	4	35.7		
Aug-04	4	32.0			Oct-04	5	43.8		
Aug-04	4	31.7	2	15.846	Oct-04	5	39.2		
Aug-04	5	42.3			Oct-04	4	34.4		
Aug-04	5	38.9			Oct-04	4	33.4	3	25.02
Aug-04	5	33.0			Oct-04	5	43.0		
Aug-04	4	29.8			Oct-04	6	57.6		
Aug-04	3	24.7	2	16.463	Nov-04	10	88.1		
Aug-04	2	16.1			Nov-04	8	78.2		
Aug-04	2	16.2			Nov-04	7	69.7	6	59.748
Aug-04	5	38.3			Nov-04	8	80.6		
Aug-04	4	33.7			Nov-04	9	76.3	11	93.208
Sep-04	3	25.2	4	33.627	Nov-04	43	395.2		
Sep-04	6	51.3			Nov-04	19	212.7		
Sep-04	21	178.6			Nov-04	17	187.4	11	121.28
Sep-04	6	42.4		0	Nov-04	17	200.2		
Sep-04	4	29.1	3	21.817	Nov-04	19	216.8		
Sep-04	3	21.9			Nov-04	19	224.7		



Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Nov-04	16	201.0			Feb-05	12	68.3		
Nov-04	14	166.0	10	118.59	Feb-05	96	621.3		
Nov-04	12	155.3			Feb-05	18	110.5		
Nov-04	10	131.1			Feb-05	12	72.3	3	18.064
Nov-04	22	223.1			Feb-05	12	72.7		
Nov-04	18	219.8			Feb-05	14	66.3		
Nov-04	11	98.2	12	107.09	Feb-05	31	32.1		
Nov-04	24	54.4			Feb-05	31	117.4		
Nov-04	15	154.9			Feb-05	30	123.1	8	32.826
Dec-04	9	95.6	10	106.25	Feb-05	30	106.1		
Dec-04	9	96.7			Feb-05	29	90.9		
Dec-04	10	113.6			Feb-05	38	174.9		
Dec-04	23	277.4			Mar-05	30	125.6		
Dec-04	11	141.8			Mar-05	24	86.5	10	36.029
Dec-04	8	95.1	12	142.71	Mar-05	23	89.4		
Dec-04	10	113.9			Mar-05	22	43.3		
Dec-04	11	119.1			Mar-05	21	49.4	8	18.815
Dec-04	31	216.1			Mar-05	20	48.7		
Dec-04	28	202.7			Mar-05	18	18.9		
Dec-04	24	173.3	18	130	Mar-05	25	90.1		
Dec-04	24	166.5			Mar-05	26	105.4		
Dec-04	25	349.9			Mar-05	27	103.1	9	34.377
Dec-04	25	166.4			Mar-05	26	109.3		
Dec-04	25	155.5			Mar-05	26	101.9		
Jan-05	45	205.7			Mar-05	27	108.5		
Jan-05	71	316.2			Mar-05	22	85.9		
Jan-05	96	438.8	43	196.52	Mar-05	17	68.6	6	24.219
Jan-05	90	391.8			Mar-05	17	69.8		
Jan-05	86	156.4			Mar-05	16	47.2		
Jan-05	26	121.0			Mar-05	25	49.2		
Jan-05	24	122.1			Mar-05	21	59.2		
Jan-05	13	76.5			Mar-05	16	50.4	5	15.763
Jan-05	12	66.5			Mar-05	17	64.7		
Jan-05	10	53.9	5	26.938	Apr-05	17	77.7		
Jan-05	12	66.3			Apr-05	20	103.1		
Jan-05	13	65.3			Apr-05	18	103.9		
Jan-05	23	79.4			Apr-05	16	51.0	7	22.301
Feb-05	22	72.3			Apr-05	20	37.7		
Feb-05	20	57.0	6	17.114	Apr-05	23	54.5		
Feb-05	15	67.8			Apr-05	34	98.7		
Feb-05	10	55.4			Apr-05	30	123.6		
Feb-05	20	124.4			Apr-05	21	97.0	8	36.963
Feb-05	18	97.0			Apr-05	23	79.0		
Feb-05	14	76.1	6	32.626	Apr-05	24	78.9		
Feb-05	13	58.8			Apr-05	33	80.4		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
Apr-05	33	80.4		
Apr-05	33	62.8	10	19.0152
Apr-05	32	86.5		
Apr-05	31	89.5		
Apr-05	32	166.5		
Apr-05	34	185.4		
Apr-05	36	207.8	12	69.25536
Apr-05	36	187.3		
Apr-05	37	147.5		

Snokist Growers Cannery					
Wastewater Treatment Plant Effluent Data - 2001-2005					
Monthly Reports					
Date	pH AB	TSS Eff mg/l	TSS lbs./D lbs./Day	BOD Eff mg/l	BOD lbs/Day lbs/Day
All Data All Seasons					
AVG		26.75322	123.9637	8.524113	43.81021
STDV		27.664	121.6585	7.670574	44.12633
COV		0.963883	0.963883	1.098529	0.963883
86% err		1.787887	7.92119	1.03739	6.041296
95% Err		2.333988	10.26422	1.350122	7.790592

The Apple Season data on the following pages was used to demonstrate the rationale for one set of TSS and BOD limitations. The timeframe analyzed covers three years from March 2002 to thru April 2005.

Snokist Growers Cannery APPLE SEASON									
Monthly Reports									
Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
Mar-02	48	144.1			Dec-03	40	180.8		
Mar-02	39	87.2			Dec-03	45	231.9		
Mar-02	40	101.4			Jan-04	138	451.2		
Mar-02	42	93.9			Jan-04	125	412.8		
Mar-02	46	89.8			Jan-04	112	355.0	31	98.245
Mar-02	52	112.8			Jan-04	112	416.6	34	126.47
Dec-02	14	25.9			Jan-04	100	382.0		
Dec-02	18	19.8			Jan-04	78	300.5		
Dec-02	20	33.7	7	11.793	Jan-04	75	315.3		
Dec-02	24	26.4			Jan-04	70	163.5		
Dec-02	26	43.4			Feb-04	62	316.5		
Jan-03	32	98.7	6	18.515	Feb-04	60	326.3		
Jan-03	30	98.1			Feb-04	50	355.3	15	106.59
Jan-03	30	100.1			Feb-04	50	358.6		
Jan-03	16	53.9			Mar-04	37	174.0		
Jan-03	20	66.4			Mar-04	30	39.5		
Jan-03	23	79.8	5	17.347	Mar-04	20	57.0	3	8.5568
Jan-03	26	56.4			Dec-04	9	95.6	10	106.25
Jan-03	28	65.4			Dec-04	9	96.7		
Feb-03	39	130.8			Dec-04	10	113.6		
Feb-03	28	84.1	5	15.012	Dec-04	23	277.4		
Feb-03	22	68.3	7	21.717	Dec-04	11	141.8		
Feb-03	26	91.1			Dec-04	8	95.1	12	142.71
Feb-03	29	58.0			Dec-04	10	113.9		
Mar-03	23	69.8	4	12.143	Dec-04	11	119.1		
Mar-03	24	72.1			Dec-04	31	216.1		
Mar-03	24	72.9			Dec-04	28	202.7		
Mar-03	21	27.3	3	3.9031	Dec-04	24	173.3	18	130
Mar-03	18	22.8			Dec-04	24	166.5		
Mar-03	15	21.3			Dec-04	25	349.9		
Mar-03	27	32.4	5	6.0048	Dec-04	25	166.4		
Mar-03	32	24.6			Dec-04	25	155.5		
Mar-03	36	45.0			Jan-05	45	205.7		
Apr-03	33	25.3	6	4.6037	Jan-05	71	316.2		
Apr-03	32	32.6			Jan-05	96	438.8	43	196.52
Apr-03	30	30.0			Jan-05	90	391.8		
Apr-03	16	10.1	5	3.1692	Jan-05	86	156.4		
Apr-03	16	31.0			Jan-05	26	121.0		
Apr-03	16	6.0			Jan-05	24	122.1		
Apr-03	13	2.2	2.99	0.4987	Jan-05	13	76.5		
May-03	14	8.2			Jan-05	12	66.5		
May-03	13	8.7	3	2.0016	Jan-05	10	53.9	5	26.938
May-03	13	9.8			Jan-05	12	66.3		
May-03	13	10.8			Jan-05	13	65.3		
May-03	12	8.5	3	2.1267	Jan-05	23	79.4		
Dec-03	52	242.9			Feb-05	22	72.3		
Dec-03	40	204.2			Feb-05	20	57.0	6	17.114
Dec-03	29	148.0	12	61.249	Feb-05	15	67.8		

*SNOKIST GROWERS*  
*TERRACE HEIGHTS CANNERY*  
***EXPIRATION DATE: JANUARY 31, 2011***

**The Pear and Apple Season data on the following pages was used to demonstrate the rationale for one set of TSS and BOD limitations. The timeframe analyzed covers three years from August 2001 thru November 2004.**

Pears and Apples

Monthly Reports

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
Aug-01	17	67.5			Oct-01	12	94.5		
Aug-01	10	48.9			Oct-01	12	97.9	5	40.8
Aug-01	6	31.9	2	10.6	Oct-01	12	99.1		
Aug-01	8	43.9			Oct-01	13	109.1		
Aug-01	8	39.0	4	19.5	Oct-01	22	180.5		
Aug-01	7	32.1			Oct-01	25	217.3		
Aug-01	5	24.6			Oct-01	30	253.2	8	67.5
Aug-01	7	33.2			Oct-01	34	286.4		
Aug-01	7	41.9			Oct-01	36	303.2		
Aug-01	6	31.5	3	15.8	Oct-01	62	399.2		
Aug-01	4	21.3			Oct-01	50	421.2		
Aug-01	2	10.3			Oct-01	47	402.2	15	128.4
Aug-01	8	40.6			Nov-01	47	372.4		
Aug-01	9	54.8			Nov-01	47	373.9		
Aug-01	9	46.8	4	20.8	Nov-01	45	322.0		
Aug-01	8	45.4			Nov-01	51	353.0		
Aug-01	7	36.2			Nov-01	60	428.3	16	114.2
Sep-01	7	31.8			Nov-01	61	482.3		
Sep-01	6	30.9	2	10.3	Nov-01	63	525.4		
Sep-01	5	27.0			Nov-01	59	471.4		
Sep-01	5	26.8			Nov-01	60	511.4		
Sep-01	8	29.5			Nov-01	61	496.5	14	114.0
Sep-01	9	28.7			Nov-01	64	550.8		
Sep-01	9	38.3	4	17.0	Nov-01	65	580.0		
Sep-01	8	29.2			Nov-01	68	603.4		
Sep-01	8	28.0			Nov-01	64	566.9		
Sep-01	7	25.8			Nov-01	59	241.1	12	49.0
Sep-01	8	27.2			Nov-01	47	199.1		
Sep-01	9	30.6	3	10.2	Nov-01	60	255.2		
Sep-01	8	21.2			Nov-01	75	202.7	21	56.7
Sep-01	8	32.7			Nov-01	90	432.3		
Sep-01	6	27.7			Nov-01	106	498.6		
Sep-01	7	35.8			Aug-02	47	142.7		
Sep-01	7	35.3	5	25.2	Aug-02	30	103.6		
Sep-01	7	44.1			Aug-02	13	47.3	10	36.4
Sep-01	7	37.2			Aug-02	10	39.6		
Oct-01	6	40.6			Aug-02	7	29.2		
Oct-01	5	37.2			Aug-02	5	18.1		
Oct-01	4	28.5	3	21.4	Aug-02	5	19.5		
Oct-01	5	34.3			Aug-02	5	21.7	4	17.3
Oct-01	5	37.7			Aug-02	3	13.1		
Oct-01	12	100.3			Aug-02	2	8.3		
Oct-01	12	79.7			Aug-02	18	72.4		
Oct-01	10	77.4	4	31.0	Aug-02	8	34.2		
Oct-01	9	66.1			Aug-02	5	22.3	3	13.4
Oct-01	8	55.6			Aug-02	6	29.0		
Oct-01	11	86.4			Aug-02	7	32.7		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Aug-02	10	42.7			Oct-02	16	116.1		
Aug-02	12	55.2			Nov-02	17	124.8		
Aug-02	12	55.8	3	14.0	Nov-02	38	311.8		
Aug-02	14	68.2			Nov-02	30	250.7		
Aug-02	15	72.6			Nov-02	22	183.5	6	
Sep-02	16	77.9			Nov-02	30	272.2		
Sep-02	18	99.7	7	38.8	Nov-02	32	264.7		
Sep-02	18	98.3			Nov-02	35	152.4		
Sep-02	18	115.6			Nov-02	30	151.1		
Sep-02	25	192.2			Nov-02	27	115.3	11	
Sep-02	29	191.6			Nov-02	23	84.0		
Sep-02	30	163.1	8	43.5	Nov-02	18	73.9		
Sep-02	34	180.9			Nov-02	18	72.4		
Sep-02	37	210.5			Nov-02	30	119.1		
Sep-02	53	325.3			Nov-02	44	161.5	21	
Sep-02	55	369.7			Nov-02	40	136.8		
Sep-02	56	342.8	14	85.7	Nov-02	34	119.1		
Sep-02	55	359.6			Nov-02	20	100.4		
Sep-02	54	392.7			Nov-02	25	127.2		
Sep-02	69	512.2			Nov-02	31	40.1	8	10.3
Sep-02	80	617.8			Aug-03	13	41.2		
Sep-02	89	708.1	22	175.0	Aug-03	10	47.9		
Sep-02	112	1001.3			Aug-03	7	33.2	5	23.7
Sep-02	134	1251.7			Aug-03	7	26.9		
Sep-02	180	1348.1			Aug-03	6	22.5		
Oct-02	150	798.1			Aug-03	6	23.0		
Oct-02	118	783.4	30	199.2	Aug-03	5	25.0		
Oct-02	100	567.1			Aug-03	3	15.8	2	10.5
Oct-02	72	409.5			Aug-03	3	17.1		
Oct-02	42	276.0			Aug-03	3	15.6		
Oct-02	35	238.2			Aug-03	8	42.6		
Oct-02	27	199.1	8	59.0	Aug-03	8	44.3		
Oct-02	25	187.2			Aug-03	7	35.5	2	10.1
Oct-02	23	143.5			Aug-03	6	31.0		
Oct-02	38	213.6			Aug-03	5	25.2		
Oct-02	34	209.3			Sep-03	8	44.8		
Oct-02	27	166.2	8	49.2	Sep-03	10	64.9	3	19.5
Oct-02	22	149.4			Sep-03	10	66.7		
Oct-02	17	111.4			Sep-03	10	62.9		
Oct-02	19	121.1			Sep-03	6	35.2		
Oct-02	20	143.4			Sep-03	7	37.5		
Oct-02	20	131.8	6		Sep-03	7	49.9	4	28.5
Oct-02	22	138.7			Sep-03	8	57.9		
Oct-02	23	130.4	8		Sep-03	8	59.4		
Oct-02	42	319.5			Sep-03	9	54.9		
Oct-02	28	234.9			Sep-03	6	40.6		
Oct-02	15	115.1	4		Sep-03	5	29.6	2	11.8

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day	Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Sep-03	8	54.6			Aug-04	20	113.8		
Sep-03	10	61.3			Aug-04	18	100.6	7	39.1
Sep-03	10	82.4			Aug-04	11	68.8		
Sep-03	8	64.7			Aug-04	6	39.8		
Sep-03	6	47.7	2	15.9	Aug-04	8	63.5	5	39.7
Sep-03	5	42.2			Aug-04	6	40.6		
Sep-03	3	27.3			Aug-04	4	33.4		
Sep-03	4	31.2			Aug-04	4	32.0		
Sep-03	4	31.6			Aug-04	4	31.7	2	15.8
Oct-03	5	37.5	2	15.0	Aug-04	5	42.3		
Oct-03	4	30.5			Aug-04	5	38.9		
Oct-03	2	14.6			Aug-04	5	33.0		
Oct-03	9	42.0			Aug-04	4	29.8		
Oct-03	8	47.5			Aug-04	3	24.7	2	16.5
Oct-03	7	53.9	3	23.1	Aug-04	2	16.1		
Oct-03	9	78.2			Aug-04	2	16.2		
Oct-03	10	84.1			Aug-04	5	38.3		
Oct-03	19	192.4			Aug-04	4	33.7		
Oct-03	12	122.9			Sep-04	3	25.2	4	33.6
Oct-03	8	90.7	5	56.7	Sep-04	6	51.3		
Oct-03	8	85.0			Sep-04	21	178.6		
Oct-03	8	59.5			Sep-04	6	42.4		0.0
Oct-03	15	106.6			Sep-04	4	29.1	3	21.8
Oct-03	12	94.5			Sep-04	3	21.9		
Oct-03	10	80.7	6	48.4	Sep-04	3	16.8		
Oct-03	8	68.2			Sep-04	13	65.3		
Oct-03	8	63.9		0.0	Sep-04	12	18.4		
Oct-03	10	73.9			Sep-04	10	57.7	4	23.1
Oct-03	10	75.9			Sep-04	45	171.9		
Oct-03	9	67.7	6	45.1	Sep-04	3	8.5		
Oct-03	9	72.1			Sep-04	12	63.5		
Oct-03	8	62.3			Sep-04	14	110.7		
Nov-03	13	71.3			Sep-04	14	126.3	6	54.1
Nov-03	11	74.3			Sep-04	15	88.8		
Nov-03	8	56.8	5	35.5	Sep-04	108	153.1		
Nov-03	8	54.8			Sep-04	13	75.9	4	23.4
Nov-03	6	36.8			Sep-04	10	51.7		
Nov-03	11	85.1			Oct-04	8	40.0		
Nov-03	10	85.1			Oct-04	24	144.1		
Nov-03	8	78.6	7	68.8	Oct-04	24	192.2		
Nov-03	9	89.6			Oct-04	9	62.3	5	34.6
Nov-03	10	89.6			Oct-04	9	67.6		
Nov-03	23	158.8			Oct-04	9	72.1		
Nov-03	20	129.4			Oct-04	11	84.4		
Nov-03	19	123.3	10	64.9	Oct-04	10	76.3		
Nov-03	18	116.8			Oct-04	9	69.1	4	30.7
Nov-03	15	96.1			Oct-04	7	51.4		

Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
Oct-04	5	34.2		
Oct-04	7	48.5		
Oct-04	3	24.5		
Oct-04	3	26.5	3	26.5
Oct-04	4	35.7		
Oct-04	5	43.8		
Oct-04	5	39.2		
Oct-04	4	34.4		
Oct-04	4	33.4	3	25.0
Oct-04	5	43.0		
Oct-04	6	57.6		
Nov-04	10	88.1		
Nov-04	8	78.2		
Nov-04	7	69.7	6	59.7
Nov-04	8	80.6		
Nov-04	9	76.3	11	93.2
Nov-04	43	395.2		
Nov-04	19	212.7		
Nov-04	17	187.4	11	121.3
Nov-04	17	200.2		
Nov-04	19	216.8		
Nov-04	19	224.7		
Nov-04	16	201.0		
Nov-04	14	166.0	10	118.6
Nov-04	12	155.3		
Nov-04	10	131.1		
Nov-04	22	223.1		
Nov-04	18	219.8		
Nov-04	11	98.2	12	107.1
Nov-04	24	54.4		
Nov-04	15	154.9		

	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs/Day
AVG	20.45367	136.3	6.941176	44.6
STDEV	24.70127	176.5	5.514925	41.0
COV	1.207669	1.0	0.794523	0.9
Count	313	313.0	68	64.0
min	2	8.3	2	0.0
max	180	1348.1	30	199.2
86%				
Confidance	2.102674	15.0	1.007187	7.5



The Cherry Season data on the following pages was used to demonstrate the rationale for one set of TSS and BOD limitations. The timeframe analyzed covers three years from July 2001 to thru July 2004.

Cherry Season				
Monthly Reports				
Date	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
Jul-01	16	72.3		
Jul-01	24	88.1		
Jul-01			24	87.7
Jul-01	60	277.2		
Jul-01	31	160.3		
Jul-01	17	95.3		
Jul-01	17	96.4		
Jul-01	17	97.5	5	28.7
Jul-01	16	86.7		
Jul-01	15	86.3		
Jul-01	14	42.0		
Jul-01	18	81.4		
Jul-01	20	13.7		
Jul-01	23	57.9	7	17.6
Jul-02	49	230.5		
Jul-02	38	176.8		
Jul-02	29	113.2		
Jul-02	24	89.7		
Jul-02	17	72.3	7	29.8
Jul-02	21	84.4	6	24.1
Jul-02	54	208.1		
Jul-03	36	321.9	18	160.9
Jul-03	30	185.1		
Jul-03	18	109.6		
Jul-03	10	74.1		
Jul-03	9	66.1		
Jul-03	9	63.7	3	21.2
Jul-03	6	43.4		
Jul-03	5	28.8		
Jul-03	9	56.4		
Jul-03	8	53.1		
Jul-03	7	41.2	2	11.8
Jul-03	7	7.1		
Jul-03	9	12.3	3	4.1
Jul-03	6	7.3		
Jul-04	52	399.0		
Jul-04	44	370.6		
Jul-04	34	280.7		
Jul-04	25	216.4		
Jul-04	16	131.6	7	57.6
Jul-04	14	119.8		
Jul-04	11	50.5		
Jul-04	11	42.9		
Jul-04	16	51.5		

	TSS mg/l	TSS lbs./Day	BOD mg/l	BOD lbs./Day
AVG	21.2	115.4	8.2	44.3
STDEV	14.1	96.8	7.1	47.7
COV	0.7	0.8	0.9	1.1
Count	43.0	43.0	10.0	10.0
min	5.0	7.1	2.0	4.1
max	60.0	399.0	24.0	160.9
86%				
Confidance	3.3	22.7	3.6	24.2

The BOD data contained on the following pages are the data used to calculate the proposed permit limitations.

Effluent BOD Data from June 2000 to April 2005

Date	mg/l	Date	mg/l	Date	mg/l	Date	mg/l
6/30/2000	18	9/12/2001	4	7/12/2002	7	8/25/2004	2
7/5/2000	14	9/19/2001	3	1/22/2003	5	9/1/2004	4
7/12/2000	12	9/26/2001	5	2/14/2003	5	9/8/2004	3
7/17/2000	10	10/3/2001	3	2/26/2003	7	9/15/2004	4
8/2/2000	19	10/10/2001	4	3/5/2003	4	9/22/2004	6
8/9/2000	6	10/17/2001	5	3/19/2003	3	9/29/2004	4
8/16/2000	5	10/24/2001	8	3/26/2003	5	10/6/2004	5
8/23/2000	7	10/31/2001	15	4/2/2003	6	10/13/2004	4
8/30/2000	4	11/7/2001	16	4/16/2003	5	10/20/2004	3
9/6/2000	4	11/14/2001	14	4/29/2003	2.99	10/27/2004	3
9/13/2000	8	11/21/2001	12	5/8/2003	3	11/3/2004	6
9/20/2000	10	11/28/2001	21	5/15/2003	3	11/5/2004	11
9/27/2000	6	7/15/2002	6	7/2/2003	18	11/10/2004	11
10/4/2000	3	8/7/2002	10	7/9/2003	3	11/17/2004	10
10/11/2000	4	8/14/2002	4	7/16/2003	2	11/24/2004	12
10/18/2000	7	8/21/2002	3	7/21/2003	3	12/1/2004	10
10/25/2000	11	8/28/2002	3	8/13/2003	5	12/8/2004	12
11/1/2000	16	9/4/2002	7	8/20/2003	2	12/15/2004	18
11/8/2000	22	9/11/2002	8	8/27/2003	2	1/12/2005	43
11/15/2000	18	9/18/2002	14	9/3/2003	3	1/26/2005	5
11/29/2000	20	9/25/2002	22	9/10/2003	4	2/2/2005	6
12/6/2000	21	10/2/2002	30	9/17/2003	2	2/9/2005	6
12/13/2000	28	10/9/2002	8	9/24/2003	2	2/16/2005	3
1/10/2001	38	10/16/2002	8	10/1/2003	2	2/23/2005	8
1/17/2001	20	10/23/2002	6	10/8/2003	3	3/2/2005	10
1/24/2001	29	10/25/2002	8	10/15/2003	5	3/9/2005	8
1/31/2001	23	10/30/2002	4	10/22/2003	6	3/16/2005	9
2/7/2001	24	11/6/2002	6	10/29/2003	6	3/23/2005	6
3/1/2001	24	11/13/2002	11	11/5/2003	5	3/30/2005	5
4/12/2001	16	11/20/2002	21	11/12/2003	7	4/6/2005	7
4/19/2001	7	11/27/2002	8	11/19/2003	10	4/13/2005	8
4/25/2001	5	12/11/2002	7	12/3/2003	12	4/20/2005	10
5/1/2001	24	1/8/2003	6	1/16/2004	31	4/27/2005	12
7/5/2001	5	12/5/2001	38	1/26/2004	34		
7/12/2001	7	2/7/2002	34	2/12/2004	15	AVG	9
7/20/2001	2	2/13/2002	19	3/18/2004	3	MIN	2
8/9/2001	4	2/20/2002	14	7/7/2004	7	MAX	43
8/22/2001	3	2/27/2002	10	8/5/2004	7	STDV	8
8/29/2001	4	3/6/2002	10	8/12/2004	5	VAR	
9/5/2001	2	4/16/2002	7	8/18/2004	2	95th Percentile	28.4
						99th Percentile	38.0

BOD mg/L PERFORMANCE-BASED EFFLUENT LIMITS					
USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION					
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE					
				LOGNORMAL TRANSFORMED MEAN =	1.98637898
				LOGNORMAL TRANSFORMED VARIANCE =	0.58351504
					10
					0
				E(X) =	9.7585
				V(X) =	75.452
				VARn	0.0763
				MEANn=	2.2400
				VAR(Xn)=	7.545
				MAXIMUM DAILY EFFLUENT LIMIT =	43.085
				AVERAGE MONTHLY EFFLUENT LIMIT =	14.277

TSS mg/L PERFORMANCE-BASED EFFLUENT LIMITS					
USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION					
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE					
				LOGNORMAL TRANSFORMED MEAN =	3.010746815
				LOGNORMAL TRANSFORMED VARIANCE =	0.883563282
				NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	20
				AUTOCORRELATION FACTOR( $\rho$ ) (USE 0 IF UNKNOWN) =	0
				E(X) =	31.5801
				V(X) =	1415.681
				VARn	0.0686
				MEANn=	3.4182
				VAR(Xn)=	70.784
				MAXIMUM DAILY EFFLUENT LIMIT =	180.755
				AVERAGE MONTHLY EFFLUENT LIMIT =	45.420

Date	Chlorine mg/L
Jan-01	0.13
Feb-01	0.18
Apr-01	0.09
Jul-01	0.06
Aug-01	0.019
Sep-01	0.07
Oct-01	0.12
Nov-01	0.07
Dec-01	0.01
Feb-02	0.01
Jul-02	0.07
Aug-02	0.1
Sep-02	0.09
Oct-02	0.11
Nov-02	0.09
Dec-02	0.019
Jan-03	0.29
Feb-03	0.25
Jan-03	0.1
Mar-03	0.18
Apr-05	0.11
May-05	0.12
Jul-05	0.04
Aug-05	0.07
Sep-05	0.03
Oct-05	0.019
Nov-05	0.02
Dec-05	0.13
Mar-05	0.1
Apr-05	0.09
Jul-05	0.09
Aug-05	0.2
<hr/>	
AVG	0.09
MAX	0.29
MIN	0.01
90th Percentile	0.18
95th Percentile	0.22

The TSS data contained on the following pages is the data used to calculate the proposed permit limitations.

Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l
6/27/2000	84	8/28/2000	13	10/23/2000	32	1/11/2001	110	7/11/2001	17
6/28/2000	72	8/29/2000	11	10/24/2000	35	1/12/2001	96	7/12/2001	16
6/29/2000	50	8/30/2000	10	10/25/2000	27	1/15/2001	136	7/13/2001	15
6/30/2000	48	8/31/2000	9	10/26/2000	32	1/16/2001	101	7/16/2001	14
7/3/2000	49	9/1/2000	8	10/27/2000	28	1/17/2001	70	7/17/2001	18
7/4/2000	44	9/5/2000	9	10/30/2000	37	1/18/2001	61	7/18/2001	20
7/5/2000	38	9/6/2000	9	10/31/2000	37	1/19/2001	58	7/19/2001	23
7/6/2000	32	9/7/2000	10	11/1/2000	37	1/22/2001	118	8/6/2001	17
7/7/2000	25	9/8/2000	12	11/2/2000	40	1/23/2001	110	8/7/2001	10
7/10/2000	29	9/12/2000	14	11/3/2000	45	1/24/2001	106	8/8/2001	6
7/11/2000	25	9/13/2000	14	11/6/2000	46	1/25/2001	105	8/9/2001	8
7/12/2000	23	9/14/2000	18	11/7/2000	50	1/26/2001	102	8/15/2001	8
7/13/2000	25	9/15/2000	20	11/8/2000	52	1/29/2001	74	8/16/2001	7
7/14/2000	29	9/18/2000	25	11/9/2000	58	1/30/2001	75	8/17/2001	5
7/17/2000	27	9/19/2000	29	11/10/2000	65	1/31/2001	76	8/20/2001	7
7/18/2000	29	9/20/2000	31	11/13/2000	58	2/1/2001	80	8/21/2001	7
7/19/2000	41	9/21/2000	40	11/14/2000	50	2/2/2001	80	8/22/2001	6
7/20/2000	50	9/22/2000	47	11/15/2000	42	2/5/2001	82	8/23/2001	4
7/31/2000	80	9/25/2000	130	11/16/2000	48	2/6/2001	80	8/24/2001	2
8/1/2000	75	9/26/2000	20	11/17/2000	52	2/7/2001	80	8/27/2001	8
8/2/2000	62	9/27/2000	14	11/27/2000	99	2/8/2001	85	8/28/2001	9
8/3/2000	44	9/28/2000	14	11/28/2000	79	2/9/2001	88	8/29/2001	9
8/4/2000	24	9/29/2000	13	11/29/2000	58	4/9/2001	59	8/30/2001	8
8/7/2000	20	10/2/2000	13	11/30/2000	54	4/10/2001	43	8/31/2001	7
8/8/2000	18	10/3/2000	10	12/1/2000	50	4/11/2001	58	9/4/2001	7
8/9/2000	14	10/4/2000	6	12/4/2000	55	4/12/2001	46	9/5/2001	6
8/10/2000	16	10/5/2000	8	12/5/2000	56	4/13/2001	33	9/6/2001	5
8/11/2000	11	10/6/2000	8	12/6/2000	57	4/16/2001	36	9/7/2001	5
8/14/2000	21	10/9/2000	11	12/7/2000	65	4/17/2001	30	9/10/2001	8
8/15/2000	20	10/10/2000	10	12/8/2000	69	4/18/2001	24	9/11/2001	9
8/16/2000	19	10/11/2000	9	12/11/2000	82	4/19/2001	24	9/12/2001	9
8/17/2000	21	10/12/2000	11	12/12/2000	96	7/2/2001	16	9/13/2001	8
8/18/2000	24	10/13/2000	16	12/13/2000	92	7/3/2001	24	9/14/2001	8
8/21/2000	29	10/16/2000	23	12/14/2000	120	7/4/2001	94	9/17/2001	7
8/22/2000	29	10/17/2000	24	12/15/2000	158	7/5/2001	60	9/18/2001	8
8/23/2000	28	10/18/2000	25	1/8/2001	150	7/6/2001	31	9/19/2001	9
8/24/2000	20	10/19/2000	23	1/9/2001	139	7/9/2001	17	9/20/2001	8
8/25/2000	17	10/20/2000	20	1/10/2001	122	7/10/2001	17	9/21/2001	8

Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l
9/24/2001	6	11/15/2001	64	3/8/2002	52	9/17/2002	55	11/8/2002	32
9/25/2001	7	11/16/2001	65	7/8/2002	49	9/18/2002	56	11/11/2002	35
9/26/2001	7	11/19/2001	68	7/9/2002	38	9/19/2002	55	11/12/2002	30
9/27/2001	7	11/20/2001	64	7/10/2002	29	9/20/2002	54	11/13/2002	27
9/28/2001	7	11/21/2001	59	7/11/2002	24	9/23/2002	69	11/14/2002	23
10/1/2001	6	11/26/2001	47	7/12/2002	17	9/24/2002	80	11/15/2002	18
10/2/2001	5	11/27/2001	60	7/15/2002	21	9/25/2002	89	11/18/2002	18
10/3/2001	4	11/28/2001	75	7/18/2002	54	9/26/2002	112	11/19/2002	30
10/4/2001	5	11/29/2001	90	8/5/2002	47	9/27/2002	134	11/20/2002	44
10/5/2001	5	11/30/2001	106	8/6/2002	30	9/30/2002	180	11/21/2002	40
10/8/2001	12	12/3/2001	117	8/7/2002	13	10/1/2002	150	11/22/2002	34
10/9/2001	12	12/4/2001	130	8/8/2002	10	10/2/2002	118	11/25/2002	20
10/10/2001	10	12/5/2001	144	8/9/2002	7	10/3/2002	100	11/26/2002	25
10/11/2001	9	12/6/2001	131	8/12/2002	5	10/4/2002	72	11/27/2002	31
10/12/2001	8	12/7/2001	126	8/13/2002	5	10/7/2002	42	12/9/2002	14
10/15/2001	11	2/4/2002	112	8/14/2002	5	10/8/2002	35	12/10/2002	18
10/16/2001	12	2/5/2002	118	8/15/2002	3	10/9/2002	27	12/11/2002	20
10/17/2001	12	2/6/2002	120	8/16/2002	2	10/10/2002	25	12/12/2002	24
10/18/2001	12	2/7/2002	129	8/19/2002	18	10/11/2002	23	12/13/2002	26
10/19/2001	13	2/8/2002	109	8/20/2002	8	10/14/2002	38	1/8/2003	32
10/22/2001	22	2/11/2002	89	8/21/2002	5	10/15/2002	34	1/9/2003	30
10/23/2001	25	2/12/2002	85	8/22/2002	6	10/16/2002	27	1/10/2003	30
10/24/2001	30	2/13/2002	81	8/23/2002	7	10/17/2002	22	1/20/2003	16
10/25/2001	34	2/14/2002	79	8/26/2002	10	10/18/2002	17	1/21/2003	20
10/26/2001	36	2/15/2002	77	8/27/2002	12	10/21/2002	19	1/22/2003	23
10/29/2001	62	2/19/2002	70	8/28/2002	12	10/22/2002	20	1/23/2003	26
10/30/2001	50	2/20/2002	61	8/29/2002	14	10/23/2002	20	1/24/2003	28
10/31/2001	47	2/21/2002	54	8/30/2002	15	10/24/2002	22	2/10/2003	39
11/1/2001	47	2/22/2002	45	9/3/2002	16	10/25/2002	23	2/14/2003	28
11/2/2001	47	2/25/2002	46	9/4/2002	18	10/28/2002	42	2/26/2003	22
11/5/2001	45	2/26/2002	44	9/5/2002	18	10/29/2002	28	2/27/2003	26
11/6/2001	51	2/27/2002	42	9/6/2002	18	10/30/2002	15	2/28/2003	29
11/7/2001	60	2/28/2002	45	9/9/2002	25	10/31/2002	16	3/5/2003	23
11/8/2001	61	3/1/2002	48	9/10/2002	29	11/1/2002	17	3/6/2003	24
11/9/2001	63	3/4/2002	39	9/11/2002	30	11/4/2002	38	3/7/2003	24
11/12/2001	59	3/5/2002	40	9/12/2002	34	11/5/2002	30	3/19/2003	21
11/13/2001	60	3/6/2002	42	9/13/2002	37	11/6/2002	22	3/20/2003	18
11/14/2001	61	3/7/2002	46	9/16/2002	53	11/7/2002	30	3/21/2003	15

Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l
9/24/2001	6	11/15/2001	64	3/8/2002	52	9/17/2002	55	11/8/2002	32
9/25/2001	7	11/16/2001	65	7/8/2002	49	9/18/2002	56	11/11/2002	35
9/26/2001	7	11/19/2001	68	7/9/2002	38	9/19/2002	55	11/12/2002	30
9/27/2001	7	11/20/2001	64	7/10/2002	29	9/20/2002	54	11/13/2002	27
9/28/2001	7	11/21/2001	59	7/11/2002	24	9/23/2002	69	11/14/2002	23
10/1/2001	6	11/26/2001	47	7/12/2002	17	9/24/2002	80	11/15/2002	18
10/2/2001	5	11/27/2001	60	7/15/2002	21	9/25/2002	89	11/18/2002	18
10/3/2001	4	11/28/2001	75	7/18/2002	54	9/26/2002	112	11/19/2002	30
10/4/2001	5	11/29/2001	90	8/5/2002	47	9/27/2002	134	11/20/2002	44
10/5/2001	5	11/30/2001	106	8/6/2002	30	9/30/2002	180	11/21/2002	40
10/8/2001	12	12/3/2001	117	8/7/2002	13	10/1/2002	150	11/22/2002	34
10/9/2001	12	12/4/2001	130	8/8/2002	10	10/2/2002	118	11/25/2002	20
10/10/2001	10	12/5/2001	144	8/9/2002	7	10/3/2002	100	11/26/2002	25
10/11/2001	9	12/6/2001	131	8/12/2002	5	10/4/2002	72	11/27/2002	31
10/12/2001	8	12/7/2001	126	8/13/2002	5	10/7/2002	42	12/9/2002	14
10/15/2001	11	2/4/2002	112	8/14/2002	5	10/8/2002	35	12/10/2002	18
10/16/2001	12	2/5/2002	118	8/15/2002	3	10/9/2002	27	12/11/2002	20
10/17/2001	12	2/6/2002	120	8/16/2002	2	10/10/2002	25	12/12/2002	24
10/18/2001	12	2/7/2002	129	8/19/2002	18	10/11/2002	23	12/13/2002	26
10/19/2001	13	2/8/2002	109	8/20/2002	8	10/14/2002	38	1/8/2003	32
10/22/2001	22	2/11/2002	89	8/21/2002	5	10/15/2002	34	1/9/2003	30
10/23/2001	25	2/12/2002	85	8/22/2002	6	10/16/2002	27	1/10/2003	30
10/24/2001	30	2/13/2002	81	8/23/2002	7	10/17/2002	22	1/20/2003	16
10/25/2001	34	2/14/2002	79	8/26/2002	10	10/18/2002	17	1/21/2003	20
10/26/2001	36	2/15/2002	77	8/27/2002	12	10/21/2002	19	1/22/2003	23
10/29/2001	62	2/19/2002	70	8/28/2002	12	10/22/2002	20	1/23/2003	26
10/30/2001	50	2/20/2002	61	8/29/2002	14	10/23/2002	20	1/24/2003	28
10/31/2001	47	2/21/2002	54	8/30/2002	15	10/24/2002	22	2/10/2003	39
11/1/2001	47	2/22/2002	45	9/3/2002	16	10/25/2002	23	2/14/2003	28
11/2/2001	47	2/25/2002	46	9/4/2002	18	10/28/2002	42	2/26/2003	22
11/5/2001	45	2/26/2002	44	9/5/2002	18	10/29/2002	28	2/27/2003	26
11/6/2001	51	2/27/2002	42	9/6/2002	18	10/30/2002	15	2/28/2003	29
11/7/2001	60	2/28/2002	45	9/9/2002	25	10/31/2002	16	3/5/2003	23
11/8/2001	61	3/1/2002	48	9/10/2002	29	11/1/2002	17	3/6/2003	24
11/9/2001	63	3/4/2002	39	9/11/2002	30	11/4/2002	38	3/7/2003	24
11/12/2001	59	3/5/2002	40	9/12/2002	34	11/5/2002	30	3/19/2003	21
11/13/2001	60	3/6/2002	42	9/13/2002	37	11/6/2002	22	3/20/2003	18
11/14/2001	61	3/7/2002	46	9/16/2002	53	11/7/2002	30	3/21/2003	15

Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l
3/26/2003	27	8/22/2003	3	10/16/2003	8	1/29/2004	75	9/3/2004	21
3/27/2003	32	8/25/2003	8	10/17/2003	8	1/30/2004	70	9/7/2004	6
3/28/2003	36	8/26/2003	8	10/20/2003	15	2/10/2004	62	9/8/2004	4
4/2/2003	33	8/27/2003	7	10/21/2003	12	2/11/2004	60	9/9/2004	3
4/3/2003	32	8/28/2003	6	10/22/2003	10	2/12/2004	50	9/10/2004	3
4/4/2003	30	8/29/2003	5	10/23/2003	8	2/13/2004	50	9/13/2004	13
4/16/2003	16	9/2/2003	8	10/24/2003	8	3/16/2004	37	9/14/2004	12
4/17/2003	16	9/3/2003	10	10/27/2003	10	3/17/2004	30	9/15/2004	10
4/18/2003	16	9/4/2003	10	10/28/2003	10	3/18/2004	20	9/16/2004	45
4/29/2003	13	9/5/2003	10	10/29/2003	9	7/1/2004	52	9/17/2004	3
5/7/2003	14	9/8/2003	6	10/30/2003	9	7/2/2004	44	9/20/2004	12
5/8/2003	13	9/9/2003	7	10/31/2003	8	7/5/2004	34	9/21/2004	14
5/9/2003	13	9/10/2003	7	11/3/2003	13	7/6/2004	25	9/22/2004	14
5/14/2003	13	9/11/2003	8	11/4/2003	11	7/7/2004	16	9/23/2004	15
5/15/2003	12	9/12/2003	8	11/5/2003	8	7/8/2004	14	9/24/2004	108
7/2/2003	36	9/15/2003	9	11/6/2003	8	7/9/2004	11	9/29/2004	13
7/3/2003	30	9/16/2003	6	11/7/2003	6	7/12/2004	11	9/30/2004	10
7/4/2003	18	9/17/2003	5	11/10/2003	11	7/15/2004	16	10/1/2004	8
7/7/2003	10	9/18/2003	8	11/11/2003	10	8/4/2004	20	10/4/2004	24
7/8/2003	9	9/19/2003	10	11/12/2003	8	8/5/2004	18	10/5/2004	24
7/9/2003	9	9/22/2003	10	11/13/2003	9	8/6/2004	11	10/6/2004	9
7/10/2003	6	9/23/2003	8	11/14/2003	10	8/11/2004	6	10/7/2004	9
7/11/2003	5	9/24/2003	6	11/17/2003	23	8/12/2004	8	10/8/2004	9
7/14/2003	9	9/25/2003	5	11/18/2003	20	8/13/2004	6	10/11/2004	11
7/15/2003	8	9/26/2003	3	11/19/2003	19	8/16/2004	4	10/12/2004	10
7/16/2003	7	9/29/2003	4	11/20/2003	18	8/17/2004	4	10/13/2004	9
7/17/2003	7	9/30/2003	4	11/21/2003	15	8/18/2004	4	10/14/2004	7
7/21/2003	9	10/1/2003	5	12/1/2003	52	8/19/2004	5	10/15/2004	5
7/30/2003	6	10/2/2003	4	12/2/2003	40	8/20/2004	5	10/18/2004	7
8/11/2003	13	10/3/2003	2	12/3/2003	29	8/23/2004	5	10/19/2004	3
8/12/2003	10	10/6/2003	9	12/4/2003	40	8/24/2004	4	10/20/2004	3
8/13/2003	7	10/7/2003	8	12/5/2003	45	8/25/2004	3	10/21/2004	4
8/14/2003	7	10/8/2003	7	1/14/2004	138	8/26/2004	2	10/22/2004	5
8/15/2003	6	10/9/2003	9	1/15/2004	125	8/27/2004	2	10/25/2004	5
8/18/2003	6	10/10/2003	10	1/16/2004	112	8/30/2004	5	10/26/2004	4
8/19/2003	5	10/13/2003	19	1/26/2004	112	8/31/2004	4	10/27/2004	4
8/20/2003	3	10/14/2003	12	1/27/2004	100	9/1/2004	3	10/28/2004	5
8/21/2003	3	10/15/2003	8	1/28/2004	78	9/2/2004	6	10/29/2004	6

Date	TSS mg/l	Date	TSS mg/l	Date	TSS mg/l
11/1/2004	10	1/13/2005	90	3/15/2005	26
11/2/2004	8	1/14/2005	86	3/16/2005	27
11/3/2004	7	1/20/2005	26	3/17/2005	26
11/4/2004	8	1/21/2005	24	3/18/2005	26
11/5/2004	9	1/24/2005	13	3/21/2005	27
11/8/2004	43	1/25/2005	12	3/22/2005	22
11/9/2004	19	1/26/2005	10	3/23/2005	17
11/10/2004	17	1/27/2005	12	3/24/2005	17
11/11/2004	17	1/28/2005	13	3/25/2005	16
11/12/2004	19	1/31/2005	23	3/28/2005	25
11/15/2004	19	2/1/2005	22	3/29/2005	21
11/16/2004	16	2/2/2005	20	3/30/2005	16
11/17/2004	14	2/3/2005	15	3/31/2005	17
11/18/2004	12	2/4/2005	10	4/1/2005	17
11/19/2004	10	2/7/2005	20	4/4/2005	20
11/22/2004	22	2/8/2005	18	4/5/2005	18
11/23/2004	18	2/9/2005	14	4/6/2005	16
11/24/2004	11	2/10/2005	13	4/7/2005	20
11/29/2004	24	2/11/2005	12	4/8/2005	23
11/30/2004	15	2/14/2005	96	4/11/2005	34
12/1/2004	9	2/15/2005	18	4/12/2005	30
12/2/2004	9	2/16/2005	12	4/13/2005	21
12/3/2004	10	2/17/2005	12	4/14/2005	23
12/6/2004	23	2/18/2005	14	4/15/2005	24
12/7/2004	11	2/21/2005	31	4/18/2005	33
12/8/2004	8	2/22/2005	31	4/19/2005	33
12/9/2004	10	2/23/2005	30	4/20/2005	33
12/10/2004	11	2/24/2005	30	4/21/2005	32
12/13/2004	31	2/25/2005	29	4/22/2005	31
12/14/2004	28	2/28/2005	38	4/25/2005	32
12/15/2004	24	3/1/2005	30	4/26/2005	34
12/16/2004	24	3/2/2005	24	4/27/2005	36
12/17/2004	25	3/3/2005	23	4/28/2005	36
12/20/2004	25	3/4/2005	22	4/29/2005	37
12/21/2004	25	3/9/2005	21		
1/10/2005	45	3/10/2005	20		
1/11/2005	71	3/11/2005	18		
1/12/2005	96	3/14/2005	25		

<b>AVG</b>	<b>34.5</b>
<b>MIN</b>	<b>11.0</b>
<b>MAX</b>	<b>84.0</b>
<b>STDV</b>	<b>19.1</b>
<b>VAR</b>	<b>38.0</b>
<b>95th Percentile</b>	<b>75.8</b>
<b>99th Percentile</b>	<b>82.5</b>



## APPENDIX D -- RESPONSE TO COMMENTS

Snokist Comments: Note Snokist Comments from Larry A Esvelt, PhD PE have been truncated to provide space for Departmental Response to specific points made in the document. The complete text is provided following the Department Response section of Appendix D.

### Snokist comment 1

**Draft National Pollutant Discharge Elimination System (NPDES) Permit No. WA-000056-6 for Snokist Growers – Terrace Heights Cannery**

BY: Larry A. Esvelt PhD PE

Snokist Growers, 2506 Terrace Heights Road, Yakima, WA 98901 discharges treated process wastewater to the Yakima River. A Draft NPDES Permit, No. WA-000056-6, has been issued by the Central Regional Office of the Washington Department of Ecology (DOE), Yakima, WA. This comments is prepared on behalf of Snokist Growers by Esvelt Environmental Engineering, Spokane, WA.

Comments are as follows:

#### DRAFT PERMIT

Special Conditions, S1. Discharge Limitations:

- A. Interim Limitations and
- B. Final Limitations

**Temperature** – Temperature Limit is proposed at 24.4° C.

Within the period of record since 2000, the effluent temperature has equaled 24.4° C (76° F) more than once. Since Yakima is located in a water short region, there is value in water conservation. Snokist Growers welcomes the opportunity to reduce water use when the opportunity arises. Water conservation could result in the discharge from the cannery being warmer than in the past. Since the calculations in the FACT SHEET accompanying the Draft Permit indicates that temperature in the Yakima River will not be adversely affected by the Snokist Growers Cannery discharge (page 21 of 64), we request that the Temperature limit be increased to provide incentive for the Cannery to conserve water.

The FACT SHEET indicates that the allowable temperature increase from the discharge would be 1.33° C when the river is below 21° C. The temperature rise in 25% of the 7Q10 low flow, based on the maximum effluent temperature in the discharge record (24.4° C), is calculated in the FACT SHEET to be only 0.021° C. When the river is above the water quality standard of 21° C, the maximum temperature rise is limited to 0.3° C according to a formula in the Water Quality Standards. The temperature increase due to the effluent at 24.4° C of only 0.009° C is well within that figure, as indicated in the FACT SHEET.

It is proposed that an allowable rise in the temperature of the river of 0.05° C, in that portion considered by the DOE in the FACT SHEET (25% of 7Q10 low flow), be allowed. That would allow an effluent temperature of 29° C according to our calculations. This would provide incentive for the Cannery to conserve water, while still being able to operate at the current capacity.

**Department's Response:**

*The temperature limitation was established in the previous permit. Anti-Backsliding provisions of Sec. 402(0) can, in some circumstances and only if the limit has not been met and if it has no adverse impact on the receiving water, allow a less stringent limit to be placed in a renewed permit. A simple request, without benefit of engineering or other documentation would not meet the requirements that would allow a less stringent limit to replace the more stringent limit already in place, which would be considered backsliding.*

*For the time frame 2001 to 2004 there were 4 months where effluent temperature was reported at 24.4°C. The permit writer using Best Professional Judgment (BPJ) allowed the temperature limit to remain in effect although no mixing zone exists for the Snokist discharge and water quality standards are to be met at the "end of pipe", point of discharge. A mass balance equation was used to illustrate the present temperature limit is unlikely to negatively affect Yakima River water quality in part to justify allowing the 24.4 °C to remain in effect at least until new water quality standards for temperature are approved by EPA. The new EPA-approved temperature criterion will certainly be lower than the current 21°C. It would not be prudent to increase the temperature limit at this time.*

*Water conservation measures are laudable, however conservation measures which are likely to increase the temperature of the discharge might also increase the concentration of other pollutants contained in the wastewater, which would need to be characterized. Prior to increasing a temperature limit the Department requires three things; One, an engineering report that outlines the proposed water conservation measures and any associated environmental risks including elevated temperature levels. Two, a mixing study that demonstrates the discharge is capable of meeting the water quality standards within a defined mixing zone and three a new application as required in WAC 173-220-150(b).*

**Snokist Comment 2:**

**BOD** – 28.4 mg/l Average Monthly Limit and 43.1 Maximum Daily Limit is included in the Draft Permit.

The proposed BOD limit is changed from a mass emission rate to concentration. The previous mass emission based permit used Best Practicable Technology limits from the Code of Federal Regulations, Chapter 40, Part 207 as the basis. The Department of Ecology apparently dislikes those regulations as being outdated (they were based on Development Documents prepared by EPA in the late 1970s). DOE development of the proposed limits is based on past performance by the Snokist Growers treatment facility, according to the FACT SHEET.

The FACT SHEET indicates that the justification for using past performance for development of discharge limitations is Chapter 90.48 RCW, Section 520. This Section reads as follows:

*RCW 90.48.520 Review of operations before issuance or renewal of wastewater discharge permits – incorporation of permit conditions.*

*In order to improve water quality by controlling toxicants in wastewater, the department of ecology shall in issuing and renewing state and federal wastewater discharge permits review the applicant's operations and incorporate permit conditions which require all known, available and reasonable methods to control toxicants in the applicant's wastewater. Such conditions may include, but are not limited to: (1) Limits on discharge of specific chemicals, and (2) limits on the overall toxicity of the effluent. The toxicity of the effluent shall be determined by techniques such as chronic or acute bioassays. Such conditions shall be required regardless of the quality of receiving water and regardless of the minimum water quality standards. In no event shall the discharge of toxicants be allowed that would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria.*

There does not appear to be any mention of conventional pollutants, such as BOD or TSS, in this passage. It therefore appears that the calculation of discharge limits using this State law as justification is not an option to be selected by DOE in issuing permit limits for conventional pollutants.

#### ***Department's Response:***

*The fact sheet cites RCW 90.48. The fact sheet on page 11 also cites the Permit Writer's Manual. The Department's Permit Writer's Manual, a guidance document for drafting wastewater discharge permits states (pp. IV-28-34): "If the federal effluent limit guidelines are over 10 years old, the permit writer should do at the least an analysis of unit process design and efficiencies to determine that the effluent guidelines constitute AKART". The mass limitations imposed under 40 CFR Part 407.62 (Subpart F), 407.22 and 407 Subpart B were originally promulgated in 1976. They are nearly 30 years old and do not reflect the performance standards common to similar permitted industries in the region or the past performance of the Permittee. The guidelines contained in 40 CFR Part 407 do not constitute AKART. The Permit Writer's Manual cites Chapter 90.48 RCW, which allows permit writers to determine performance based limits for BOD and TSS. 40 CFR Part 123.25 Subpart B 9(a) "States are not precluded from omitting or modifying any provisions to impose more stringent requirements" to include Sec. 122.43, Sec. 122.44 and Sec. 122.45.*

*RCW 90.48.520 was in reference to the chlorine limit. Following facility review the permit was revised. The revised permit cites RCW 90.48 and in particular RCW 90.48.010 as it refers to AKART. Limitations need be consistent with proper operations of a pollution control technology. This is evident in the case of performance-based limitations where the limits are established based on the actual range of treatment capability. A violation of the limit would then be indicative of a system upset. In the case of Snokist, the existing Technology-Based Limitations are incapable of detecting a system upset short of catastrophic failure when one considers the 95<sup>th</sup> and 99<sup>th</sup> percentiles derived from past performance. The TSS 99<sup>th</sup> percentile is 136.4 mg/L the current technological maximum daily limit is 3.7 times that and the average monthly limit is 1.8 times the 99<sup>th</sup> percentile.*

**RCW 90.48.010**  
**Policy enunciated.**

It is declared to be the public policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that *end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington.* (emphasis added) Consistent with this policy, the state of Washington will exercise its powers, as fully and as effectively as possible, to retain and secure high quality for all waters of the state. The state of Washington in recognition of the federal government's interest in the quality of the navigable waters of the United States, of which certain portions thereof are within the jurisdictional limits of this state, proclaims a public policy of working cooperatively with the federal government in a joint effort to extinguish the sources of water quality degradation, while at the same time preserving and vigorously exercising state powers to insure that present and future standards of water quality within the state shall be determined by the citizenry, through and by the efforts of state government, of the state of Washington.

In determining AKART the Permit Writer's Manual provides this guidance.

Chapter IV page 34 of the Permit Writer's Manual.

In individual permitting situations AKART may be equivalent to or more stringent than the federal effluent guidelines. A permit manager may examine a development document and available treatment technologies for a particular category of discharger and make a determination that the federal effluent limitations are AKART. This becomes more difficult as the effluent guidelines become dated and the manufacturing processes change. In some cases the manufacturing processes change to such an extent that they no longer fit those described in the development documents. As described in an earlier section, those effluent guidelines less than 5 years old will always be AKART for the pollutants described in the development document. For effluent guidelines between 5 and 10 years old, the permit manager should compare production processes, pollutants generated and treatment efficiencies at the facility with those in the development document and in the treatability data base. For effluent guidelines older than 10 years, the permit writer should do the previous analysis and review unit processes design if time allows.

*40 CFR Part 401.12(b) states the national goal of eliminating the discharge of all pollutants.*

**Snokist Comment 3:**

The FACT SHEET states (page 16 of 64), regarding use of performance based limits, that “They greatly simplify the permit and aid in verifying compliance **without committing the Permittee to costly upgrades or engineering reports.**” (emphasis added). For the period of record reviewed for development of the “performance based” limits (June 2000 through April 2005), the limits proposed would have resulted in two violations of the average monthly BOD limit. Two permit violations would appear to require Snokist Growers to have engineering reports prepared, and potentially would require upgrades to the treatment system. It is notable that the violations would have occurred during winter cold weather operation, when biological reaction rates are slowest and water viscosity is highest leading to less efficient biological removal of BOD, and slower settling of the biological solids in the clarifier.

***Department’s Response:***

*Two violations in a 58 month period represent a 96.6 % compliance rate, which by all standards is excellent. There is no statute or Departmental policy that would require an engineering report at that level of compliance. With average monthly limitations at the 95<sup>th</sup> percentile two violations in the 2000-2005 time period indicates the facility should not have significant compliance problems with no facility improvements.*

**Snokist Comment 4:**

**TSS - Influent** – The discharge from the processing plant is treated by fine screening prior to metering and discharge to the aeration basin. Suspended solids in the screened water are very low. It was shown during R&D studies at the cannery that there is little to no value to monitoring TSS at this point. We recommend deletion of the requirement for TSS monitoring in the screened discharge to the aeration basin.

***Department’s Response:***

*The Department agrees and influent TSS monitoring will not be required in the proposed permit.*

**Snokist Comment 5:**

**Flow - Effluent to River** – The date for initiation of flow metering to the river in the monitoring table does not correspond to the schedule for meter installation in Section S8.A. It is proposed that the initiation of monitoring be based on completion of the flow metering system according to the compliance schedule.

***Department’s Response:***

*The Department agrees and the monitoring table will be changed to reflect the Compliance Schedule.*

### Snokist Comment 6:

DOE has an in-house document titled Permit Writers Manual that is used for preparation of NPDES and State permits. Chapter IV is titled "Deriving Technology Based Effluent Limits." Part 1.8 of Chapter IV is titled "Converting Performance to Limits". This section suggests use of an EPA technique for development of Best Practicable Technology limits, which consists of the transformation of data to natural logarithms and development of monthly limits as EXP (Z+2s) and daily limits as EXP (Z+3s). The Permit Writers Manual procedure appears to have been adapted from an EPA document, "Technical Support Document for Water Quality-based Toxics Control, EPA/502/2-90-001. (Note: Z is the mean of the log-transformed data and s is the standard deviation of the log-transformed data. EXP means the base  $e$  raised to the power indicated.)

Using this suggested technique would result in Maximum Month BOD effluent limit of 32.4 mg/l and a Daily Limit of 70 mg/l, using the full data set from mid 2000 through spring 2005. However even this technique would have resulted in violation of the monthly average limit for BOD during the data review period. This is because of short duration processing runs during cold weather that result in lower efficiency of treatment (discussed above) and lower quality effluent. Using the above technique for development of limits for data collected at temperatures using data from the system only when operating at or below 5° C results in Maximum Month BOD effluent limit of 78 mg/l, and Daily Maximum BOD of 187 mg/l.

The above calculated limits, based on a procedure that appears to be recommended in the DOE Permit Writers Manual should be considered the preferable procedure for establishing effluent limits if it is established that State law enables DOE to base permit limits on past performance. Permit limits should be different during cold weather months

(e.g., December – February) when treatment system temperature is 5° C or less to limit impact on Snokist from the new permit limits.

Another factor that is pertinent during consideration of appropriate limits for BOD, is that the BOD and TSS in the effluent are not independent. Biological solids TSS exert a BOD at a ratio of about 0.3 g BOD per g TSS in the effluent. Therefore, BOD concentration is expected to relate to TSS concentration in the effluent, where:

$$\text{BOD} = 0.3 \times \text{TSS} + \text{soluble BOD}.$$

This should be taken into consideration, and the ratio of BOD and TSS limits maintained within reasonable values.

### Department's Response:

*The limits are based on past performance for the time frame 2000-2005 using the 95<sup>th</sup> percentile and the Department's performance based limits spreadsheet which includes any relationship between TSS and BOD in the real time data. The limits for BOD in the proposed permit consist of an average monthly value of 28.4 mg BOD /L and a maximum daily value of 43.1 mg BOD / L. The performance based limits spreadsheet calculates the average monthly limit at 14.3 mg BOD / L, however the 95<sup>th</sup> percentile is 28.4 mg BOD/ L. Conversely the 99<sup>th</sup> percentile is 38 mg BOD / L and the spreadsheet calculates 43.1 mg BOD / L. A combination of the performance based limits spreadsheet and the 95<sup>th</sup> percentile of the raw data was used to provide Snokist with a transition set of more lenient limits for the proposed permit term. During the course of meetings between Snokist and the Department, Snokist was advised that the limits would be reevaluated at the end of the proposed permit term to reflect performance that spans the additional four years of operation.*

*The effects of temperature and the advisability of allowing two set of limits, one for warmer seasons and the other for winter months, was also discussed. The raw data was split into two subsets at performance above 40° F and performance below 40° F. The Department demonstrated that there was little to gain from a violations standpoint for the Permittee by separating the seasons and not using the 95<sup>th</sup> percentile (average monthly) and log normal spreadsheet (maximum daily) for all the data. What in effect happens is that under warm conditions a sub-set with better performance in turn lowers the limit, which increases the likelihood of a violation. During negotiations the consultant for Snokist proposed a winter limit derived from winter performance and a warm weather limit derived from both winter and warm weather performance. The Department rejects this proposal as it unfairly skews warm weather limits to the high side due to performance that does not occur in that season.*

*Using the log normal based limits spreadsheet limits when conditions are above 40° F, instead of two or three violations an increase to 11 violations for BOD and 11 for TSS occurs. The number of violation using the 95<sup>th</sup> and 99<sup>th</sup> percentile are comparable, when conditions are below 40°F 2, violations of the average monthly limit for TSS and BOD each would have occurred. The proposed limits are based on the past performance of the facility for the entire year, which because the full range of performance is included in the calculations a higher limit occurs in warmer weather then would be if isolated from cold weather performance. The 95<sup>th</sup> and 99<sup>th</sup> percentile value covers most cold weather circumstances and is more generous either for Average Monthly or Maximum Daily. The limitations were calculated using two methods and Average Monthly and Maximum Daily limits were selected to the benefit of the Permittee.*

<b>Above 40 °F (4.4°C)</b>				
<b>Performance Limits Spreadsheet</b>			<b>95<sup>th</sup> and 99<sup>th</sup> Percentile</b>	
<i>Average Monthly</i>	<i>Maximum Daily</i>		<i>Average Monthly</i>	<i>Maximum Daily</i>
10.1 mg/L BOD	31.0 mg/L BOD		21 mg/L BOD	33.5 mg/L BOD
35.3 mg/L TSS	135.5 mg/L TSS		80 mg/L TSS	129.9 mg/L TSS
<b>Below 40 °F (4.4°C)</b>				
27.7 mg/L BOD	103.6 mg/L BOD		40.3 mg/L BOD	43.3 mg/L BOD
96.6 mg/L TSS	297.7 mg/L TSS		130 mg/L TSS	144.3 7 mg/L TSS
<b>Proposed Permit Limitations</b>				
TSS Average Monthly 101 mg/L Maximum Daily 180 mg/L				
BOD Average Monthly 28.4 mg/L Maximum Daily 43 mg/L				

**Snokist Comment 7:**

TSS – 101.1 mg/l Average Monthly Limit and 43.1 mg/l Maximum Daily Limit is included in the Draft Permit.

The same comments as presented above for BOD are appropriate for TSS limits based on performance, and for the procedures used for generation of the limits based on the performance data.

The proposed limits would have resulted in one violation of the Average Monthly Limit during the period of data review for the permit (June 2000 through April 2005). This violation would have occurred during a winter cold weather month.

Use of the technique presented in the Permit Writers Manual where monthly limits are calculated as EXP (Z+2s) and daily limits are calculated as EXP (Z+3s), provides different limits. For warm season operation ( $T > 5^{\circ}\text{C}$ ) the limits would be calculated as 130 mg/l monthly limit, and 340 mg/l daily limit. For the cold weather season (process temperature  $\leq 5^{\circ}\text{C}$ ) the monthly limit would be calculated as 245 mg/l and the daily limit as 521 mg/l. A different limit for the cold vs. warm season is would be needed to accomplish the stated objective of DOE to minimize the impact on Snokist of new limits.

***Department's Response:***

*See response to Snokist comment 6.*

*BOD and TSS limits are based on their own data and were calculated with great deliberation and sensitivity to what would be reasonable to the company. They should not require an additional engineering or cost to the company. The company appears to be under the mistaken impression that one exceedance of a limit triggers the requirement for an engineering report (ER). The Department is not sure what purpose the ER would serve in this hypothetical case. The Department does not typically enforce on one or two Maximum Daily limit exceedances of BOD or TSS limits. However; if the company feels the limits are unreasonable, they have the option of doing an AKART analysis engineering report to determine what available treatment technology constitutes AKART for this facility and receiving water body. The analysis could then be submitted for review and approval.*

**Snokist Comment 8:**

Total Sulfate – Effluent to River – There is no discussion or justification for addition of this monitoring requirement in the FACT SHEET accompanying the Draft Permit. It is proposed that it be eliminated.

***Department's Response:***

Sulfate and sulfite are by-products of excessive dechlorination with sulphur dioxide. . Monitoring of sulfate in the effluent is not required and will be removed from the monitoring requirements of the permit. The Department will require the Permittee in the Schedule of Compliance, Pollution Prevention Plan, to address the issue of excess dechlorination.



**Snokist Comment 9:**

Dissolved Oxygen – Effluent to River – The frequency for monitoring dissolved oxygen in the discharge to the river appears to be excessive. We recommend that the frequency be changed to correspond to the frequency for chlorine monitoring in the effluent. Accessing the outfall requires passage across land that does not belong to Snokist Growers and entails notification and coordination with the property owner each time that the monitoring is performed at the outfall.

**Department's Response:**

*The Department is concerned that past data indicate dissolved oxygen concentrations have fallen below 1 mg/L and to zero on some occasions. The current permit requires DO monitoring 5 times a week. The rationale for this was that excess dechlorination has the potential to pass through instantaneous oxygen demand in the form of sulphite. On the occasions that a zero oxygen level was detected, there is a strong possibility that there existed a negative oxygen concentration or oxygen demand created by over-dechlorination. At present the oxygen concentration is the only means of assessing, albeit indirectly, the status of dechlorination. The Department has required the Permittee to address the issue of over-dechlorination in the Schedule of Compliance. Dissolved oxygen monitoring will be reevaluated in the following permit cycle or until such time as the Permittee can demonstrate an acceptable means of assuring over dechlorination is not occurring, unless data indicate adverse impacts to the river prior to that time.*

**Snokist Comment 10:**

**A. Design Criteria**

The design criteria presented in the Draft Permit are incorrect. These criteria were those in place prior to the upgrade of the aeration system in 2000. In 2000 the aeration capacity was increased by 30% by replacement of the two 60 HP aerators with 150 HP aerators. This resulted in an overall surface aerator drive motor and gearmotor capacity of 750 HP, as opposed to 570 HP that relates to the BOD<sub>5</sub> and COD loading shown in the Draft Permit. The new design criteria should be as follows:

Parameter	Design Quantity
Monthly Average Flow	1 MGD
BOD <sub>5</sub> influent loading	24,000 lbs/day
COD influent loading	40,000 lbs/day

**Department's Response:**

*The design criteria can only be modified once the Department has received and approved a new engineering report or addendum to the existing approved engineering report.*

**Snokist Comment 11:**

- Page 6 of 64, ¶3. The clarifier is 90 ft diameter, not 90 ft circumference.

***Department's Response:***

*The Department agrees.*

**Snokist Comments 12:**

- Table 1. This table contains wastewater characteristics after treatment.

***Department's Response:***

*Comment noted.*

**Snokist Comment 13:**

- Table 2. The design criteria for the treatment plant are currently as above.

***Department's Response:***

*See Department's response to comment 9.*

**Snokist Comments 14:**

- Page 11 ---, of 64. Rationale for Performance Based Limits is unsound from the cited State Law, as 90.48 RCW is for toxics, not conventional pollutants such as BOD and TSS.

***Department's Response:***

The Department's Permit Writer's Manual, the guidance document for drafting wastewater discharge permits states (pp. IV-28-34): "*If the federal effluent limit guidelines are over 10 years old, the permit writer should do at the least an analysis of unit process design and efficiencies to determine that the effluent guidelines constitute AKART*". The mass limitations imposed under 40 CFR Part 407.62 (Subpart F), 407.22 and 407 Subpart B were originally promulgated in 1976. They are nearly 30 years old and do not reflect the performance standards common to similar permitted industries in the region or the past performance of the Permittee. The guidelines contained in 40 CFR Part 407 do not constitute AKART. The Permit Writer's Manual cites Chapter 90.48 RCW which allows permit writers to determine performance based limits for BOD and TSS.

**Snokist Comment 15:**

- Significant space in the FACT SHEET is devoted to justification that there are no significant differences in treatment facility performance between products being run. Even though the graphs presented do not support the DOE stance (e.g., there appears to be a significant difference between the concentration of the effluent during Apples, as opposed to during Pears and Apples for both BOD and TSS), we concur that there are not significant differences in performance due to the product being processed (apples, pears, plums). We do assert however that there are significant differences in performance of the treatment facilities due to temperature variations, with less effective performance experienced in winter months.

These months happen to coincide with Apples-only processing, whereas Pear and Pear-Apple processing occurs in the warmer periods prior to December at Snokist Growers Cannery.

***Department's Response:***

*Comment noted.*

**Snokist Comment 16:**

- Usually there is a statistic cited (e.g., Students t test, etc.), and a level of statistical difference (e.g., 90%, 95%, etc.) when statements such as "Statistically there is no difference ----" is included in a document. Without such a reference such statements are in themselves of no significance.

***Department's Response:***

*The error bars are at the 86% confidence level as indicated on the graphs and in the text of the document. At the 86% confidence interval, the range at which means are compared is considerably narrowed beyond that of a 95% or 99% confidence interval. This narrowed range in as such is a graphical representation of an estimation of statistical significance. Overlapping error bars at the 86% confidence level indicate there is no statistical difference between different population means, whereas no overlap indicates there is.*

**Snokist Comment 17:**

- Page 14 of 64. The FACT SHEET states that “The mass loading limits are unnecessarily generous, which have the potential to negatively impact the receiving water unnecessarily.” There is no substantiation provided for either assertion in this statement, and it appears that the statement may be the personal opinion of the preparer.
  - The current permit limits are based on 40 CFR 407, which is used nationally for permitting of fruit and vegetable processing facilities.
  - If there is a potential for adversely impacting the receiving water, or if it is currently being adversely impacted to the extent that the receiving water does not or would not meet water quality standards, the water should be placed on the State 303(d) list of water bodies not meeting criteria. So far as we are aware, this is not the case. If there is need to reduce BOD or TSS discharges to below the current permit levels, then it should be established through a TMDL study and plan. Under a TMDL implementation plan all discharges to a water body are expected to be reduced to attain compliance with the standard. There is no current program, that we are aware of, to ratchet the BOD or TSS permits of municipal dischargers or other industries for this stretch of the Yakima River, as would be required if a TMDL indicated the need.

***Department’s Response:***

*Section 101(b) of the CWA states “... it is the policy of the Congress to recognize, preserve and protect the primary responsibilities and rights of the States to prevent, reduce and eliminate pollution...”*

*The Yakima River is 303d listed for numerous parameters as indicated on page 19 of this fact sheet. Since writing of the fact sheet EPA has approved the Department’s listing of the Yakima River as a Category 5 waterbody, which indicates impairment. The Yakima River is listed both above and below the Snokist outfall for pH, Temperature and Dissolved Oxygen in addition to the other parameters listed on page 19 of the fact sheet.*

*Of the industrial dischargers to the Yakima River that create food processing wastewater, there are two potato processors located down river of the Snokist plant. Their limitations for BOD and TSS have been set considerably lower than the older Federal Categorical Limits. Federal and State regulations both require that the more stringent of the categorical standards or locally-engineered standards be utilized in developing effluent limits. The limits for these food processors are considerably less than the proposed Snokist limits. Average Monthly limit for BOD at both facilities is 15mg/L with Maximum Day of 30mg/L and 45 mg/L respectively. The TSS Average Monthly limitations range up to 18 mg/L and 36 mg/L for the Maximum Day. In the case of one discharger the Department has required an AKART analysis be conducted to ascertain the Permittee’s treatment capability. Snokist has the right conduct its own AKART analysis if it wishes.*

**Snokist Comment 18:**

- Page 15 of 64. The language tone of the FACT SHEET implies that it is bad that Snokist Growers so remarkably performs better than the effluent limits, which are based on national standards. The FACT SHEET contains a statement "The data in Table 3 demonstrates the extent to which the limitations are not in line with performance." and follows with an unfounded assertion "The intent of the Clean Water Act was to insure continuing improvement in wastewater treatment technology to protect the water resources of the country." We question the expression of what appear to be purely personal opinions in Fact Sheets accompanying permits. That they are included leads to skepticism as to whether the preparation of the permit is completely professional and unbiased.
  - One could as easily have asserted that the table referenced demonstrates the extent with which extra efforts and exemplary facilities at Snokist Growers allows them to out-perform the national norm for establishment of permit limits.
  - We do not recall that congress stated the presented continuous improvement rationale in connection with PL 92-500.

***Department's Response:***

*The Permittee's discharge is permitted under the National Pollution Discharge Elimination System. 40 CFR Part 401.12(b) states the national goal of eliminating the discharge of all pollutants. PL-92-500, which has been amended many times since its enactment into law by congress, recognized that technology would change over the course of time and that what was once regarded as the gold standard would be surpassed by more recent technological developments. The EPA originally planned to update the 40 CFR s periodically, but ultimately it has been left up to the Delegated States to determine new standards with new federal standards long over due. The Delegated States are free to establish their own effluent limits as long as they are not less stringent then the federal limits.*

**Snokist Comment 19:**

- Same page. The FACT SHEET questions the relevance of the 1994 settlement agreement between DOE and Snokist Growers. This, again, appears to be a personal opinion, and unless this is an official statement of DOE, backed by the State Attorney General office, it should not be included in this document. The agreement referenced is a legally binding document.

***Department's Response:***

*Comment noted.*

**Snokist Comment 20:**

**Comments from : Snokist - Letter dated 11/14/05 by Herbert Hart, Pollution Control Supervisor, Snokist Growers.**

We have reviewed Draft Permit WA-000056-6. Please see comments submitted by Dr. Larry A. Esvelt, PE, on our behalf.

As additional comments, we would like consideration of the following:

Snokist Growers Cannery was selected as an exemplary treatment facility for development of Best Practicable Technology by EPA. Results from our operation were used, with results from other exemplary facilities to generate effluent guidelines. These were codified in 40 CFR, Part 407.

Snokist Growers has published the results of our Research Development and Demonstration (RD and D) projects for fruit processing wastewater treatment. These results have been used by industries and engineers nationally and worldwide for design of fruit processing wastewater treatment systems. We have been recognized by industry groups for our pollution control efforts. Recognition by the Pacific Northwest Pollution Construction Association (now Pacific Northwest Water Association), National Cannery Association (now National Food Processors Association) and Northwest Food Processors Association, among others.

The Washington Department of Ecology has used the Snokist Growers wastewater system as an illustration of best technology and has encouraged regulations and other industries to visit the facilities. Christina Gregoire, Director of the Department of Ecology (now Governor of Washington State) visited the plant and treatment facility and sent a letter congratulating the Company on its effort toward water pollution control and water conservation.

As expressed in the fact sheet, the only violation of permit conditions have been late submittals of monthly report, which were the result of occasional late reporting of results from an outside laboratory.

We take pride in exceeding the expectations for Best Practicable Technology so consistently. We strongly feel that we should not be punished for performing better than our peer fruit processors, who are also our competitors in a highly competitive industry. More severe limitations on our treatment facilities will result in our being less competitive with Fruit processors in other states and also internationally as our global economy expands.

We would propose that the permit be streamlined for ease of administration, but that effluent requirements not ratcheted to a lower level.

***Department's Response:***

*Your track record is excellent and rightfully you should be proud of that fact. As all industries realize the costs of environment protection and pollution abatement is part of the cost of doing business as a responsible corporate neighbor, which is backed by Federal and State law. Snokist has a proven track record. The limitations are a direct reflection of the performance of the Snokist wastewater treatment plant operation. The proposed limitations are a tool to assure that the waters of the state are protected and that the Snokist wastewater treatment plant will continue to operate at its current level.*

**Snokist Comment 21:**

**Comments from : Snokist - Letter dated 11/14/05 by Doug Hall, Plant Manager, Snokist Growers Processed Division**

We and our consultant, Dr. Larry A. Esvelt, Esvelt Environmental Engineering, have reviewed the Draft NPDES Permit NO. WA000056-6. Our pollution control supervisor, Herb Hart and Dr. Esvelt have submitted comments on our behalf.

I would like to emphasize that Snokist Growers takes great pride in its accomplishments to minimize pollution of the Yakima River.

I would also emphasize the competitive nature of our industry. Numerous food processors have closed in recent years due to lack of increase in consumption of our products, lack of progress in processing efficiency and product improvements and due to overall cost escalations, including costs for wastewater treatment. In addition, foreign competition has impacted our industry due to their lower operating costs, including cost for labor and for pollution control.

Please be assured that Snokist Growers Cannery will continue its vigilance toward pollution control and will implement improvements that are demonstrated to be beneficial to the Yakima River. However, we intend to resist regulations that (1) add unnecessary cost to our business and (2) that do not demonstrably benefit the environment.

***Department's Response:***

*The proposed limitations are based on the past performance of your facility and as such require no capital outlays except for the expected costs associated with maintenance and equipment replacement. Performance limits were never meant to be static, but were meant to be improved upon, as required by State and Federal law. The lower permit limits are intended only to assure that the Snokist wastewater treatment plant continues to operate at the efficiencies it has in the past. The limits were derived using the actual performance of your wastewater facility over a five year period. The Department in the course of renewing permits usually reviews the past three years of operation in the calculation. At Snokist's request, the Department reviewed an additional two years in order to capture "bad fruit years", which are typically hard to treat. Following a 30-day facility review process, at a meeting between the Department and Snokist, it was brought to the attention of the Department that additional data had been collected during the course of the current permit. Snokist claimed this data needed to be analyzed to determine a more accurate limits proposition. The Department agreed and extended the facility review phase of the permit process an additional month. At the end of this period, negotiations over the data set resumed. The Department allowed the inclusion of what it believes represented data outliers reflective of improper Operation and Maintenance into the calculations. This resulted in a considerably less stringent set of limitations presented in the proposed permit. Snokist has acknowledged that the current permit limitations would have resulted in a compliance record rate greater than 95%. No additional costs, of course, were involved with the historical record and no additional costs should be expected, short of maintenance, during the course of the proposed five-year permit cycle.*

**Additional Comments by the Department:**

During the course of the review in preparation for the response to comments, the Department has discovered several mistakes that need correction:

- Tables on page 38 should read

	Temperature Mass Balance Model @ 25% of 908 CSF Regulated Flow			
CHRONIC DILUTION				
eff flow	effluent temp	River csf	ambient temp	<u>final</u> <u>temp</u>
1.39	24.4	227	23	23.009
Allowable increase 0.3°C			Predicted Increase	
			0.009 °C	

	Temperature Mass Balance Model			
CHRONIC DILUTION				
effluent csf	effluent temp	River csf	ambient temp	<u>final</u> <u>temp</u>
1.39	24.4	227	21	21.021
Temperature Increase Limit t=34/(21+9) = 1.133			Predicted Increase	
			0.021 °C	

- Inserted TSS table on page 59 should read

<b>AVG</b>	<b>31.1</b>
<b>MIN</b>	<b>2</b>
<b>MAX</b>	<b>180</b>
<b>STDV</b>	<b>30.6</b>
<b>VAR</b>	<b>38.0</b>
<b>95th Percentile</b>	<b>101.1</b>
<b>99th Percentile</b>	<b>136.4</b>